

The Linguistics of Maya Writing

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The Linguistics of Maya Writing

Edited by Søren Wichmann

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ONE

The Linguistic Epigraphy of Maya Writing

Recent Advances and Questions for Future Research

SØREN WICHMANN

Max Planck Institute for Evolutionary Anthropology and University of Copenhagen

If the mid-eighties represented the great boom in the phonetic decipherment of the Maya script, with the high points being the publication of Justeson and Campbell (1984) and Stuart (1987), the late nineties and the turn of the century may be characterized as the culmination of its linguistic interpretation. The purpose of this book is, in a manner of speaking, to catch this second great wave in Maya epigraphy.

The book does not pretend to represent an introduction to Maya writing. The reader who has no previous acquaintance with the writing system is advised to first look at introductions such as in the recent books by Coe and Van Stone (2001) and Montgomery (2002). The former has a rather heavy focus on the lexical elements so far identified in the inscriptions, while the latter is broader and also more detailed. Both books are beautifully and profusely illustrated. What they both lack, however, is extensive attention to precisely the area covered by this volume, namely the orthographical mechanisms and grammar of the script. Thus, the papers collected here would be a logical next step for anyone wishing to acquire a more profound understanding of how the writing system works.

This volume presents seven new papers (chaps. 4, 6, 8, 10, 11, 12, 14) and updated or, in some cases, completely revised versions of six additional papers (chaps. 2, 3, 5, 7, 9, 13) dating to the years 1984–1998. The latter group of papers have collectively left deep traces in the field of linguistic Maya epigraphy even though all but one of these six older works (chap. 5) have remained unpublished until now. Due to the complex roots of many of the contributions, as well as the equally complex dialogues that take place among them, some words of introduction are appropriate.

Although linguists and linguistically oriented researchers have always been involved in the decipherment of the Maya script, it is noteworthy that a heavily linguistic methodology has never played any major role in the decipherment of individual signs. Once the resources of the Landa “alphabet” had been exhausted, the method that paved the way for further decipherments was that of identifying substitution patterns in spelling variants allowing for the phonetic identification of signs with unknown values drawing on clues from signs of known values (Stuart 1995). The method of identifying grammatical

patterns in the script and then going on to match these with attested or reconstructed material from alphabetically documented Mayan languages is playing an increasingly greater role, not so much in the decipherment of individual signs, but in the decipherment of grammar. Those who believe that they have contributed something to this area must acknowledge, as did the eleventh-century scholar Bernard of Chartres, that “we are but dwarfs sitting on the shoulders of giants,” since the grammatical decipherment presupposes the phonetic one. It should be added, though, that most of the dwarfs are at the same time giants, people who are engaged both in the decipherment of individual signs and the elucidation of phonological and grammatical patterns. Whether the linguistic epigrapher is sitting on his or her own shoulder or someone else’s, the basic methodology involves identifying consistent patterns in the script and then going on to match the patterns with patterns of nonhieroglyphic linguistic sources or, minimally, to render the proposals probable in terms of what one might expect from a real, Mayan language.

The first major attempt at a strictly linguistic approach to the script, Victoria Bricker’s *A Grammar of Mayan Hieroglyphs* (1986) was somewhat premature. Although the book does contain extremely important epigraphic insights, and continues to represent a useful resource for overviews of grammatical features of Ch’olan and Yucatecan languages, not enough of the script could be read at the time to make full-scale grammatical decipherment a viable project. Major attempts to deal with questions concerning the language(s) of the inscriptions and the phonology, grammar, and discourse organization of the hieroglyphic texts did not begin to become possible until a decade later, and many questions concerning grammar at large still remain to be answered. The present volume is a step toward a new grammar of Maya hieroglyphs. In the following I summarize the various contributions.

Part I: The Language Situation

The first paper (chap. 2), “Chontal Linguistic Influence in Ancient Maya Writing: Intransitive Positional Verbal Affixation” by Zachary X. Hruby and Mark B. Child, harks back to an earlier paper, written under the supervision of John Robertson, that discussed intransitive positional affixes (Hruby 1996). In collaboration with Mark Child (Hruby and Child 1998), the paper was developed further by adding political explanations and more archaeological context for the distribution of the suffix *-wan*, which Hruby had found to be innovated by the—possibly Chontal—language of the inscriptions in the northwestern Maya lowland area at Palenque and Tortuguero during the Late Classic. The subsequent spread of the affix to the inscriptions of other Maya cities in particular seemed to call for some political contextualization. This volume presents a revised version of Hruby (1996) that includes some of the observations of Hruby and Child (1998). Hruby and Child acknowledge a close methodological affinity between their distributional study and the 1995 Ph.D. thesis of Alfonso Lacadena, which laid out the methodology for the study of the development and distribution in time and space of paleographical traits. Indeed, Lacadena had also already been engaged in finding features diagnostic of different languages in the script (e.g., Lacadena 1997b) when the news of Hruby’s findings was passed on to him via John Robertson at a mini-conference at Sundance arranged by Brigham Young University in December 1997.¹ Subsequently, Lacadena and I have identified several new

features indicative of a variety of vernaculars (Western Ch'olan, Eastern Ch'olan, Yucatecan, Tzeltal) serving as substrates that to different degrees have left their imprints on the hieroglyphic texts from various regions (Lacadena and Wichmann 2000, 2002). The quest for the identification of the language(s) of the Maya hieroglyphs is not a new one (e.g., Campbell 1984, Justeson and Fox 1989, and references in Houston et al. 2000: table 1), but it has been particularly fruitful during the latter part of the 1990s.

An area touched by Hruby and Child that is much less exhausted in subsequent research is the correlation of the distribution in time and space of different kinds of cultural (including linguistic) manifestations. They conclude that “[t]he binding of epigraphy, historical linguistics and, in the future, iconography and archaeology is clearly a pathway to a much deeper understanding of linguistic and social change in Maya society.” Their paper may serve as a small-scale model for the practice of interdisciplinary work elucidating interaction in the Maya lowlands. It is no understatement that there is material for dozens of papers and monographs in the new research area that the paper by Hruby and Child identifies.

“The Languages of the Dresden Codex: Legacy of the Classic Maya” by Robert Wald (chap. 3) is a slightly revised version of one of two important contributions of the mid-1990s to the illumination of the question of the language(s) of hieroglyphic codices. Wald’s paper on the Dresden, which is now finally seeing publication,² was first circulated in 1994 and Lacadena’s on the Madrid was presented in 1996 (and published as Lacadena 1997a). Both follow the same methodology of focusing on features of the texts that unequivocally point to either Yucatecan or Ch’olan as the language of the respective codices under scrutiny and conclude that both Yucatecan and Ch’olan elements are represented in the scripts. Since little further work has been done on the linguistic identification of the codices, Wald’s paper remains as provocative as it was when it was originally written. Paleographic studies of the Dresden (Zimmermann 1956: table 5) and Madrid (Lacadena 2000) codices have shown that different scribes wrote different parts of them. An obvious next step in the linguistic identification is to see whether there are correlations between the segmentation of a codex according to scribal hands and the segmentation that would correspond to different languages. If no such correlation exists one may begin to wonder whether the codices are written in a Ch’olan-Yucatecan hybrid representing a *lingua franca*, possibly susceptible to variation stemming from the local language of the scribes. This is a fascinating area of research open to future scholarship.

1. This mini-conference, whose participants were Stephen Houston, John Robertson, David Stuart, Alfonso Lacadena, Barbara MacLeod, and Robert Wald, represented a major exchange of ideas. Another forum, in which many of the contributors to this volume have continued to meet during the late 1990s, is the Texas Maya Meetings at Austin. The speed of e-mail exchanges and the increasing conference activity has made it more difficult to define certain “circles” of scholars, but, as in any branch of learning, sociological factors do continue to play an important role in the development and dissemination of ideas (Houston 2000: 125–36).

2. Apart from minor changes the paper is presented in its original form. The author has, however, appended alphabetically numbered endnotes with information updating the original.

PART II: PHONOLOGY

In “The Orthographic Distinction between Velar and Glottal Spirants in Maya Hieroglyphic Writing” (chap. 4), Nikolai Grube effectively adds a whole new column to the syllabary of Maya writing, arguing that the script distinguished systematically between velar and glottal spirants (or fricatives). While such a distinction had been suspected by some scholars in the past (e.g., Justeson 1989), Grube is able to show for the full range of **hV** and **jV** signs that it actually exists. The importance of this discovery for epigraphy and historical linguistics cannot be overstated. Among the consequences are that the range of possible readings produced by spellings containing **hV** and **jV** signs is narrowed, increasing the control over identifications of morphemes in the script, and that the precision of the data contributed by the hieroglyphic inscriptions to language history is increased.

While Grube seems to have exhaustively analyzed the candidate **hV** or **jV** syllabic signs from the decipherer’s perspective, leaving no slot unoccupied in the new column of the syllabary, he has been generous enough toward future scholars not to map out in all details the spatio-temporal patterns of the break-down of the orthographic **h : j** distinction—although he does outline the major episodes—and has left such details as the apparent phonological fluctuation between /h/ and a glottal stop or zero for more in-depth investigation.

“Disharmony in Maya Hieroglyphic Writing: Linguistic Change and Continuity in Classic Society” (chap. 5) is republication of Houston, Stuart, and Robertson (1998), only slightly revised for the present volume. Here, the seminal suggestion is that the “silent” vocalic part of syllabic signs is not simply deleted in the pronunciation but serves to provide information about the pronunciation of the preceding syllabic nucleus even if the vowel as such is not pronounced. The authors argue that synharmonic complements generally indicate a short vowel, while disharmonic complements may indicate a long vowel, a vowel followed by *h* or—potentially—a vowel followed by a glottal stop. The last possibility is said to be usually excluded because glottal stops tend to become lost in Ch’olan. The paper is not only the first to suggest a solution to the age-old mystery of why Knorozov’s synharmony principle (e.g., Knorozov 1955b) is so often violated but also unveils a whole new area of phonology of the Maya script to which epigraphers have earlier been blind. Several works are expected to follow in the wake of this ground-breaking article. One is presented in this book, as chapter 6, “On the Representation of the Glottal Stop in Maya Writing” by Alfonso Lacadena and me. It constitutes a reexamination of the arguments of Houston et al. (1998) and attempts to provide some refinements of their orthographic rules. The revision has produced three harmony rules (i.e., rules of syn- and disharmony) which state, in general, that (1) synharmony indicates a short vowel, (2) disharmony in *i* indicates a long vowel, and (3) disharmony in *a* indicates the presence of a glottal stop. When these general rules are in conflict some special ones set in. The more specific formulations of the disharmony rules, then, are complementee-complementer combinations indicating a long vowel: *i-a*, *e-i*, *a-i*, *u-i*, *o-i*; and combinations indicating a glottal stop: *i-u*, *e-a*, *a-u*, *u-a*, *o-a*. One of the concomitants of the rules is that *Ce* and *Co* signs may function only as synharmonic complements. As an additional new feature, as compared with the harmony rules of Houston et al., we argue that a preconsonantal *h* is never indicated by means of harmony rules.

Some epigraphic problems still remain to be examined more closely, including the status of a few cases of apparent **e-u** complementation patterns and the history of the orthographic system. Furthermore, the relations between the phonology of the Ch'olan inscriptions and that of various reconstructed stages of the Mayan family need to be explored in greater depth. Although to me it is now clear that the script distinguished three components of syllable nuclei (short vowel vs. long vowel vs. glottal stop), the opinions about what the phonology of the parent language looked like and what the innovations characterizing Ch'olan were have become less unanimous. A recent suggestion (Brown and Wichmann 2003) operates with no less than 12 different syllable nuclei at the proto-Mayan level. The integration of these historical linguistic findings with epigraphy is not yet fully achieved, although the epigraphic and linguistic results are largely compatible.

Part III: Grammar

The papers in this section are ordered on a cline from the more morphologically oriented papers to those that open toward the areas of discourse-motivated grammatical items and syntax.

The original version of the paper “Passive Voice in Classic Mayan Texts: CV-*h*-C-*aj* and -*n-aj* Constructions” by Alfonso Lacadena was written in early 1996 and distributed that year among participants at the March Maya Meetings in Austin. A revised version was distributed one year later at the same forum. As it appears in this volume (chap. 7), the paper has been subjected to a thorough second revision and, as such, contains findings that for years have been well-known among many epigraphers and have already left a deep impact on the field as well as important new insights. The paper examines two types of passives, the CV-*h*-C-*aj* passive of CVC root transitives and the -*n-aj* passive of non-CVC transitives. It discusses the morphological elements that enter into these two derivations and identifies hieroglyphic examples. The distinction between CVC roots and non-CVC root (in some cases better labeled “derived”) transitives is a fundamental one throughout the Mayan languages, and it is one of the main achievements of the paper to point out the significance of this distinction for Classic Ch'olan. As one of the most recent additions to the paper, Lacadena also comments on the diachrony of CV-*h*-C-*aj* passive, summoning Early Classic glyphic evidence from Tikal in support of the hypothesis of Houston et al. (2000) that *-*h*...-*aj* was originally an intransitive positional bipartite morpheme which later took on the passive function displacing a former *-*V*₁*y* passive to the mediopassive. Furthermore, in the course of discussing morphemes that are homophonous or near-homophonous with elements of the passive derivations or that are otherwise relevant to the theme of the paper, Lacadena identifies no less than three suffixes in the script that have not previously received scrutiny by epigraphers, an -*aj* ~ -*ij* verbalizer, an -*aj* nominalizer, and an -*aal* nominal derivational suffix.

What the previous paper achieved for the Classic Ch'olan verbs—the identification of a system defining the relationship among apparently disparate phenomena and the discovery of several new affixes—the next one achieves for the Classic Ch'olan nouns (chap. 8). Marc Zender's paper “On the Morphology of Intimate Possession in Mayan Languages and Classic Mayan Glyphic Nouns” analyzes the grammatical and semantic noun

category of intimate possession, which is defined by the occurrence of one of three absolutive suffixes (i.e., suffixes that mark the unpossessed, absolutive noun stem). These are: *-aj*, *-is*, and *-Ø*, which attach to stems referring respectively to items of personal property, body parts, and kin. The category identified is better known as “inalienably possessed,” but the author prefers “intimately possessed,” a label he feels better captures the quality that is shared among body parts, kinship terms, and certain types of culturally loaded property such as clothing, jewelry, heirlooms, etc. While the *-aj* suffix has already been identified by Houston et al. (2001: 46), the correct analysis of *-is* and the recognition of a *-Ø* morpheme as part of the paradigm is uniquely due to Zender. It is a surprising and highly interesting fact that the *-is* is attested in no other extant Mayan languages but the Poqom ones, Poqomam and Poqomchi’, and that these languages actually seem to have acquired the affix from the very language represented by the hieroglyphic inscriptions. Zender’s paper not only makes a strong empirical contribution to our knowledge of Classic Ch’olan grammar—in a paper that is in addition sprinkled with original epigraphic observations—but it also makes the important methodological point, which is increasingly recognized and generally guides the contributions to the present volume, that the inscriptions should be regarded as a linguistic data-set in its own right. The time when data from extant Mayan languages were haphazardly read into the script is over. Not only has the control over epigraphic methods increased to such a degree that results produced by them must be taken seriously even if they are unexpected, but we should also consider that the unexpected is expected given the dynamicity of Classic Ch’olan and its dominant position among languages of adjacent regions.

In “Telling Time in Classic-Ch’olan and Acalan-Chontal Narrative: The Linguistic Basis of Some Temporal Discourse Patterns in Maya Hieroglyphic and Acalan-Chontal Texts” (chap. 9), Robert Wald embarks upon a theme he has studied partly in collaboration with Barbara MacLeod and partly as his own dissertation research at the University of Texas at Austin throughout the latter part of the 1990s. While some of Wald’s research has already been published (Wald and MacLeod 1999; Wald 2000c), the present paper represents a closer look at grammatical patterns in the *Paxbolon Maldonado Papers*, a set of documents recorded during the colonial period in Acalan Chontal, for the purpose of shedding light on comparable patterns in the inscriptions. Although a system of anterior and posterior event markings signaling earlier and later dates was uncovered over a half-century ago, disagreement is still widespread as to the linguistic equivalents of these markers and how they are to be read. Wald’s study turns to the Acalan-Chontal texts for clues to the linguistic function and analysis of the phenomenon partially encompassed by the anterior event indicator. It offers descriptions and examples of what is argued to be a temporal deictic enclitic attached to verbs in both bodies of texts. In Acalan Chontal the enclitic takes the shape *-ihi* (with the allomorph *-i*) and in Classic Ch’olan *-iiy* (with the much rarer allomorph *-ijiiy*). The comparison reveals similarity not only in form but also in function and usage. Both in the Acalan-Chontal and the Classic Ch’olan languages they serve to clarify temporal relationships among events both internal and external to the discourse. Bridging the levels of sentence and discourse organization, they are of crucial importance to the wider textual hermeneutics and may even offer insight into the scribes’ approaches to history and historical narrative.

The model of Classic Ch’olan discourse organization presented by Wald is challenged

by John Robertson, Stephen Houston, and David Stuart in their contribution “Tense and Aspect in Mayan Hieroglyphic Script” (chap. 10). While Wald sees Classic Ch’olan as having an aspectual system with a basic perfective vs. imperfective opposition, where *-iiy* is a special, supplementary device for marking past reference, Robertson et al. see the language of the Classic inscriptions (“Classic Ch’olti’an”) as having a past- vs. present-tense opposition, where *-iiy*, when occurring on verbs, should be analyzed as a suffix marking past tense that is in paradigmatic opposition to present tense, marked as $-\emptyset$. The majority of verbs in the glyphic texts would, in this model, be in the present tense. The present tense must of necessity, then, be interpretable as a historical present when the context licenses it. Since earlier stages of Mayan are reconstructible as having an aspectual rather than a tense system, the authors are aware that they have to argue for the plausibility of a shift from an aspectual to a tense system and they cite the case of the Sudanese (African) language Lulubo as an attested parallel to their proposed scenario. A concomitant of their theory is that “Classic Ch’olti’an” was straight ergative. If it were a split ergative, all intransitive verbs that do not carry *-iiy* (i.e., verbs that in the interpretation of Robertson et al. are in the present tense) should be inflected with the ergative set of person markers. A similar position on the issue of ergativity was taken in Houston (1997), although the assumption there was that the language of the Classic inscriptions had an aspectual distinction. To briefly sketch the pros and cons of the new position in Robertson et al. (this volume) as compared to that of Houston (1997), it may be said that the new position has the advantage that it is easier to conceive of the use of a historical present in a tense system (pro) whereas the passage from an aspect system (before the time of inscriptions) to a tense system (in the inscriptions) and back again to an aspect system (in the modern Ch’olan languages) complicates the scenario (con). The authors, however, do not see their proposal as complicating matters, but rather as a plausible way of accounting for the split-ergative aspectual system extant in Ch’olti’. Thus, the system they propose for the hieroglyphic stage has both its historical antecedent and its natural descent. In their section “Problems with Alternative Views,” Robertson et al. defend their model against the more widely assumed position of which Wald is a representative. Wald, on his part, likewise carries out a dialogue with the paper of Robertson et al. throughout his paper.

The papers by Wald and by Robertson et al. present fairly elaborate and explicit models for the verbal system of the Classic-period inscription and critically address points of alternative interpretations. Since the arguments are laid out clearly and in a detailed manner in both papers, the respective ideas are fully open to scholarly evaluation. It is hoped that the contrapuntal positioning of both papers within the present volume will stimulate other epigraphers and linguists to contribute to the debate.

Although Barbara MacLeod’s contribution “A World in a Grain of Sand: ‘Secondary Verbs’ in the Classic Maya Script” (chap. 11) focuses quite narrowly on a certain class of verbs in the Ch’olan inscriptions, it sets into play a wide range of questions of current interest concerning orthography, morphology, and discourse. Perhaps unlike any other contribution to the volume it conveys a sense of what it means to work in the middle of the various crosscurrents in the present intellectual climate of epigraphy. MacLeod’s work continues to be as thoroughly avant-garde as her very first contributions to the study of Maya writing (MacLeod 1987 [1983], 1984), which helped pave the way for the new field of linguistically oriented epigraphy. Specifically, her paper deals with derived transitive

verbs. This category may be said to be the last cell in the four-celled quadrant defining the major verb categories of hieroglyphic Ch'olan to be filled out. Just like other Mayan languages in general, the members of the Ch'olan group distinguish four major verb categories that may be labeled (a) CVC (or root) intransitives, (b) CVC (or root) transitives, (c) non-CVC (or derived) intransitives, and (d) non-CVC (or derived) transitives. Members of the first three of these categories and much of their associated morphology has already been identified in the script (cf. the summary of chapter 8 above). It is MacLeod's key insight that a particularly thorny set of apparently disparate verbs, including 'to say,' 'to leave,' 'to witness,' 'to order,' and others, actually form a category identifiable as the last of the four major Mayan verb categories just mentioned (i.e., derived transitives, or, to be more precise, derived transitives in the perfect status). MacLeod proposes that all these verbs take an *-ej* suffix, which is posited on the basis of an attested Tzeltalan perfect status marker for derived transitives with proto-Mayan ancestry discussed in work by Terrence Kaufman (e.g., Kaufman 1986). The merits of the system are that the shape of the suffix receives support from comparative linguistic evidence and that the relationships between the spellings and the phonological forms they represent are in accord with the improved understanding of phonology and spelling rules (cf. chapters 4–6).

MacLeod's paper also discusses issues of the form and function of the combinations of derived transitives with the *-iyy* enclitic (a discussion that relates to chapter 9 of this volume), the special discourse grammatical characteristics of the derived perfect transitives, that is, their tendency to follow other sentences referring back to previously described events (a characteristic that has motivated the ad hoc label "secondary verbs"), the question of whether there is a completive/incompletive distinction on derived transitives, and finally she addresses an alternative analysis proposed by John Robertson (cf. chapter 10 of this volume) according to which the forms she treats as verbal are better viewed as nominalized antipassives.

The purpose of my paper "The Grammar of the Half-Period Glyph" (chap. 12) is to look at different grammatical phenomena such as the morphological processes of antipassivization, positional use, nominalization, possession, and adjectivization as well as the syntactic phenomena of coordination and subordination through the prism of a single glyphic expression, the so-called half-period glyph. The high degree of morphological versatility of the expression, which enters into calendrical statements relating to 10 "k'atun" and 10 "tun" anniversaries, has hitherto gone unnoticed. In itself, this would be enough to motivate an examination, but the fact is that among the variants of the expression there are some that are either morphologically rare or even unique, which enhances the importance of the investigation. In the section on syntax the paper examines the coordinate construction using examples wherein the half-period expression shows that there is a preference for an S/A pivot requiring that among coordinate verbs the coreferential arguments should be in S (subject of transitive) and A (subject of intransitive) functions. Subordinate constructions where the particle *ti'* is interpreted as a subordinator meaning 'in order to' are also briefly examined.

While the preceding chapter departs from a single glyphic expression and only follows the investigation of syntactic patterns as far as the occurrences of this particular expression takes it, David Mora-Marín's paper "The Preferred Argument Structure of Classic Lowland Mayan Texts" (chap. 13) is more ambitious. Setting out to characterize the Pre-

ferred Argument Structure (PAS) of Classic lowland Mayan hieroglyphic texts, the author proposes a PAS favoring at most one lexical argument per clause, in S function, as new information. He also extensively discusses coordinated clauses with coreferential pivots and agent- and object-extraction constructions in order to determine whether Classic lowland Mayan texts exhibit a syntactic pivot alignment and to identify the role that voice constructions serve in these processes. He suggests a close interaction between those constructions and the proposed PAS and argues that neither syntactic ergativity nor accusativity plays a major role in them. The strength of the paper lies in its use of solid insights about the syntax of Mayan languages in general, the large set of examples brought into focus, and the new types of questions that it raises for linguistic epigraphic research. The observations about syntax in the epigraphic literature have largely been limited to basic word-order phenomena or have focused on either the morphosyntactic or discourse ends of the continuum—neglecting phenomena that are closer to the core of syntactic studies. Thus, Mora-Marín’s study is truly pioneering.

Part IV. Language Materials

The paper “Ch’olti’: An Analysis of the *Arte de la lengua Ch’olti* by Fray Francisco Morán” by Mareike Sattler (chap. 14) provides an overview of Ch’olti’ grammar based on a thorough inspection of the original Morán manuscript kept in the archives of the American Philosophical Society in Philadelphia. Because of the many close similarities between the language of the Ch’olan inscriptions and Ch’olti’ the overview should be highly useful for epigraphers. The description is phrased such that it is accessible and satisfactory to linguists and nonlinguists alike.

A Note On Orthography

As an editorial intervention all authors have been encouraged to use the orthography of the Academy of Mayan Languages of Guatemala (López Raquéc 1989). Transcription and transliteration formats follow the standards proposed in Stuart (1988b). Since Stuart does not (and could not have—since it was not an issue at the time) deal with ways of transcribing and/or transliterating features such as vowel length, glottal stop, and pre-consonantal /h/ and since it would be premature to impose a standard on the representation of recent features of script interpretation, there is variability in this respect among the authors. Chapter 6 gives some recommendations, but the authors were not presented with these recommendations as norms to be followed. Not only would this be inappropriate at this stage but it was also impossible since the section was formulated after most authors had handed in their papers. Although to an outsider the transcriptions may seem to vary randomly, the variation systematically reflects the agreement of the individual author with different positions stated explicitly in this volume. As an example: the case of the word for ‘book’. One may choose to transliterate this in three different ways: as *hun*, *huun*, or *hu’n*. The first would be appropriate for someone who is not convinced that the phonetic complements provide cues concerning the nature of syllable nuclei (i.e., the presence/absence of vowel length and glottal stop). So someone who adopts neither the view of chapter 5 nor that of chapter 6 would write the word *hun*. The transliteration *huun* is in

keeping with the proposals of chapter 5 and *hu'n* with that of chapter 6. As for transcription, HUUN vs. HU'N are similarly manifestations of adherence to one or the other of the two views just mentioned. However, the use of HUN may signal either disbelief in both views or simply the choice of a broad transcription motivated by the view that, whereas phonetic complements provide information about the status of the syllable nucleus, the logogram itself is not inherently encoded for this information. The discussion in the section "Recommendations Concerning Transcription and Transliteration" in chapter 6 provides more background concerning these matters.

Dedication

This book is dedicated to my co-contributors, who have all shown a remarkable engagement in the project ever since I launched it in October 1999, collectively entrusting me with my favorite selection of papers in Maya epigraphy, to Jeff Grathwohl, Editor-in-Chief of the University of Utah Press, for his effectiveness and support now as well as in the past, and finally to the spirit of the Danish Institute for Advanced Studies in the Humanities, where I was affiliated as a member of the first, small team of researchers during September 2000–August 2001, a position that allowed me to safely cross a critical juncture and comfortably finish this as well as many other vital projects.

PART I: THE LANGUAGE SITUATION

TWO

Chontal Linguistic Influence in Ancient Maya Writing

Intransitive Positional Verbal Affixation

ZACHARY X. HRUBY

University of California, Riverside

MARK B. CHILD

Yale University

Introduction

Linguistic research within the past two decades has shown that various lexical items from the Ch'olan and Yucatekan language families are attested in Maya hieroglyphic writing (ca. A.D. 250 to 1500). In a recent study, Houston et al. (2000) have shown that the language of the hieroglyphs (Classic Ch'olti'an) originated from Eastern Ch'olan. These scholars argue that Classic Ch'olti'an was a prestige language that established linguistic continuity between elites over a large geographical area where different languages and dialects were probably spoken. Western Ch'olan and Yucatekan languages may have been spoken by elites and commoners alike, but they were not considered "high" or suitable for liturgical settings (Gair 1996). Despite efforts by elites to maintain the purity of Classic Ch'olti'an over time, spelling preferences of local vernaculars would have naturally seeped into the high script. Such loan words would usually take the form of nouns, like the Yucatekan word for house: *otoch*—instead of *otot*. In addition, it is rare that grammatical forms of the verbal complex are effected, or even replaced, because high languages are valued above localisms (Gair 1996). A shift in grammar can be accompanied by political and economic changes in history because of the exclusive nature of prestige languages and the rigor with which they are often preserved. When this phenomenon is recognized, it should be considered relatively rare and worthy of investigation.

Grammar change can be witnessed in the six verbal categories found in the Classic Maya inscriptions, which are universally present in all Mayan languages as (1) positionals, (2) intransitives, (3) transitives, (4) intransitive positionals, (5) transitive positionals, (6) intransitive transitives (Robertson 1992). These six verb types are derived from transitive, intransitive, and positional verbs, but in the case of the intransitive transitive verbs, for example, a grammatical element is affixed to a transitive verb to allow it to function

as an intransitive verb. In this paper we present evidence that the intransitive positional affix *-wan* was imported into Classic Ch'olti'an from the common language of Chontal during the Late Classic period. The affix *-wan* eventually replaced the intransitive positional affix *-laj* that had its historical origins in the ancestral languages of Classic Ch'olti'an. We base our arguments on a distributional analysis of recorded intransitive positional affixes and historical models of linguistic change laid out by Robertson (Houston et al. 2000).

The general goals of this paper are to determine the role of the intransitive positional affixes in the Classic period script, but also in the history of Mayan languages from Common Mayan to the present. By providing a distributional pattern of the textual occurrences of the *-wan* and *-laj* affixes, we can begin to understand why these two affixes were inscribed simultaneously in Late Classic texts. The specific questions addressed here are: (1) How, when, and where was the *-wan* affix imported into the intransitive positional category of Classic Ch'olti'an? (2) What is the linguistic history of the *-laj* affix, and does the hieroglyphic record reflect this history? and (3) What happened to these affixes after the Classic period?

The existence of a common language affecting the morphology of a prestige language, as it is attested in the Maya script through time and space, has important implications for understanding the expansion of elite culture into peripheral zones during the Classic period. Consequently, we propose that (1) there is no linguistic connection between the positional affixes in the script and the Yucatekan language groups, (2) previous theories (Robertson and Houston 1997; Robertson 1998; Houston et al. 2000) concerning linguistic shifts and changes in history are validated by textual evidence, (3) the *-wan* affix in the script came from a linguistic importation process influenced by Chontal speakers on the western fringe of the Classic Maya culture area, (4) the *-wan* affix, along with other related Chontal influences, can be traced sweeping across the Maya lowlands in a generally easterly direction, and (5) the Chontal *-wan* affix eventually replaced the Classic Ch'olti'an *-laj* affix, which can be seen in the southeastern area at the time of the Maya "collapse" where the descendent languages of Classic Ch'olti'an were spoken after the Spanish conquest (Houston et al. 2000).

Historical Linguistic Analysis

We briefly outline the terminology used in the historical linguistic analysis of the Mayan verbal complex. The term "pre-Script" is a linguistic category that refers to the Mayan language that was spoken preceding the Classic period (Robertson and Houston 1997). The term "Classic Ch'olti'an" refers to the language recorded in the inscriptions of the Classic period and does not pretend to embody the entire language of the Classic Maya (Robertson and Houston 1997: fig. 1). It indicates that Classic Ch'olti'an is indeed its own language and not a hodgepodge of different languages (see Figure 2.1). Although commoners may have been speaking a variety of dialects or languages apart from Classic

3. The intransitive positional can be considered to be a positional verb that has been modified to act as an intransitive verb. *Wan* and *-laj* are affixes that were used anciently to modify positional verbs into intransitive positionals.

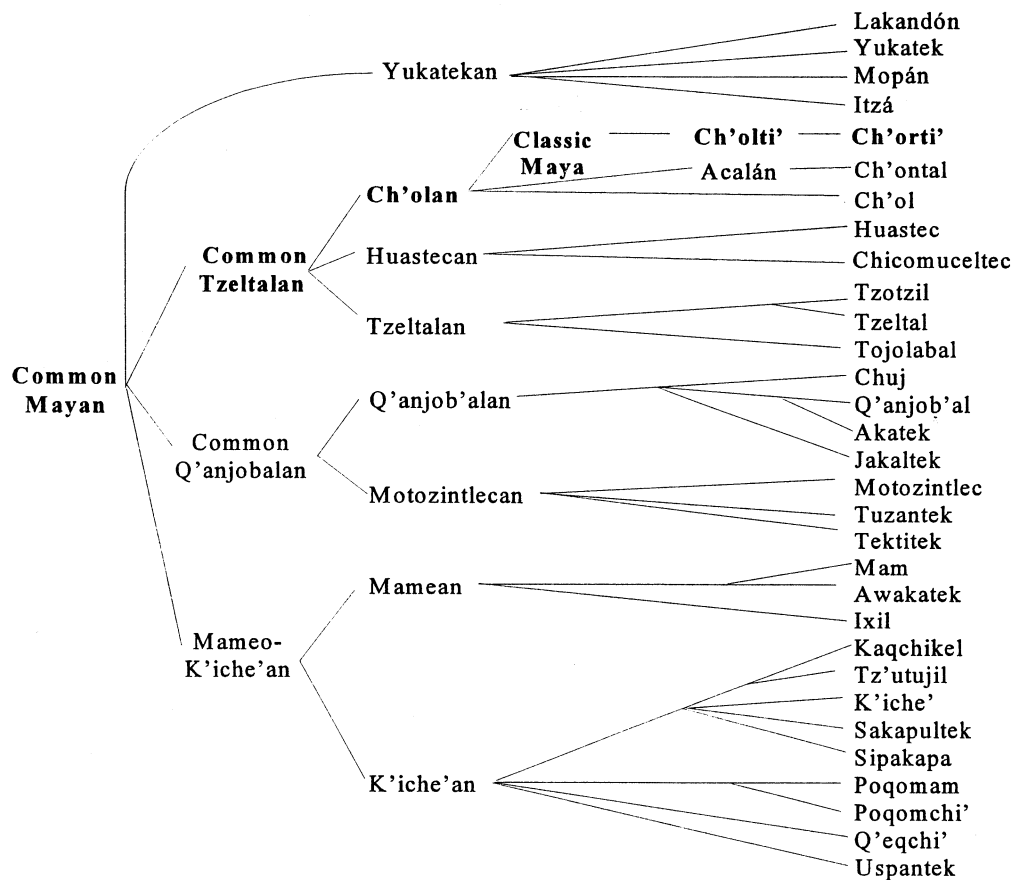


Figure 2.1. The Mayan language chart (after Houston et al. 2000).

Ch'olti'an, the term suggests that the language of the script is a prestige language used mostly by the elite for political and religious expression (Houston 1994, 2000; Houston et al. 2000; and Lacadena and Wichmann 2002).

The positional affixes used in Classic Ch'olti'an elucidate an important range of historical linguistic change that began with Common Mayan and continued through to the present with Chortí—the only extant descendant of Classic Ch'olti'an (Robertson 1998; Houston et al. 2000). These linguistic shifts have traditionally been accompanied by an overlap in semantic boundaries between the verbal categories of the intransitive transitives⁴ and, vital to our discussion, the intransitive positionals (Houston et al. 2000: fig. 2). It is necessary to mention both, because affixation often passes from one category to the other. Figure 2.2 illustrates the historical relationships between verb categories, with lines marking the usual movement of affixes from one category to another. The general trend

4. The most common hieroglyphic examples of the intransitive transitive verb are transitive verbs that have been put into the passive voice. For example, *chu-b-k-aj* is the passive form, or intransitive transitive form, of the transitive verb root *chuk*. In this case, the *-b-...-aj* affix marks the passive and places the verb in the intransitive transitive verb category.

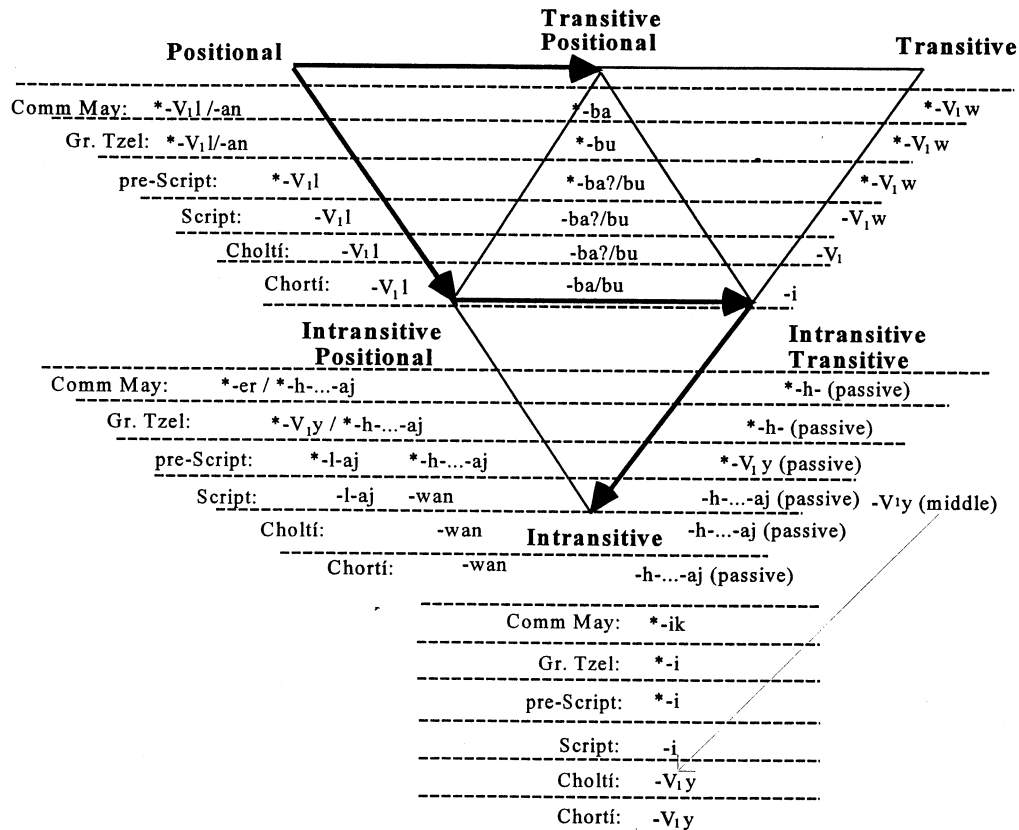


Figure 2.2. The Mayan verbal categories diagram (after Houston et al. 1998).

in this series of shifts is to have two foci of change, where different forms of affixation are being used simultaneously in one language at one time. As a split or divergence in languages takes place (e.g., Common Mayan to Greater Tzeltalan), one of these affixes stays in the intransitive positional category while the other shifts to the intransitive transitive category (cf. Houston et al. 2000; Hruby and Robertson 2001). To continue the cycle of linguistic overlap that drives the language change, a new intransitive positional affix is either borrowed from the inherent structure of that Mayan language (e.g., the ubiquitous positional *-l- in Common Mayan) or imported from another language dialect (e.g., the Chontal *-wan* affix into Classic Ch'olti'an).

In the pre-Script language a modification on the Greater Tzeltalan intransitive positional *-h-...-aj took place in the form of *-laj, wherein the *-l- was borrowed from the Common Mayan positional category (common to all Mayan languages). In addition to the newer *-laj* affix, the *-h-...-aj also shifted to the intransitive positional category of the pre-Script (Robertson and Houston 1997). In the split between the pre-Script and Classic Ch'olti'an, the intransitive positional *-h-...-aj shifted to the intransitive transitive category of the language of the script, becoming a passive, while the *-laj* affix continued into the intransitive positional category of Classic Ch'olti'an. In sum, the *-laj* affix was the original intransitive positional for Classic Ch'olti'an because (1) the two linguistic shifts of *-h-...-aj and *-laj* were unique only to Classic Ch'olti'an and not found in any other

Mayan dialects, and (2) the *-laj* affix can be linguistically reconstructed back to Common Mayan from Classic Ch'olti'an.

Although the *-laj* affix is apparently cognate with Classic Ch'olti'an as an intransitive positional, another intransitive positional affix, *-wan*, overlaps with it during the Classic period. The history of the intransitive positional category reveals that *-wan* was imported from another language, because it cannot be reconstructed back to Common Mayan from the Classic Ch'olti'an language (Robertson 1998; Houston et al. 2000). Furthermore, the most plausible language that could have transmitted the *-wan* affix would have been Chontal, because it is the only other Mayan language featuring this affix. Since *-laj* has more ancient origins in Common Mayan, we would expect to find it in the hieroglyphic script before the imported *-wan* affix.

Epigraphic Analysis

The first thorough analysis of positional affixation in Maya hieroglyphic writing was carried out by Barbara MacLeod (1984; 1987). She noted that the logograph for the verb root *chum* (Figure 2.3) was the only glyph that could clearly be defined as a positional, but that there might exist other possibilities in the form of the 819-day introductory glyph (Figure 2.4). MacLeod based her interpretations on the two different suffixes that commonly followed these verbs, which were read at that time as *-wan* (Figure 2.5) and *-lah* (Figure 2.6). She convincingly argued that the *-wan* affix, suffixed to the *chum* logograph, was a clear example of positional morphology in the Cholan languages, citing examples from Choltí, Chortí, and Classical Chontal.

Choltí	chun	-wan	-en		'yo estuve'
	estar	pos.			
Chortí	u wop'-i		u hor	a tur -wan	'He covers his head and sits down'
	cover		head	sit	
CChn	chum	-wan			'sit - preterite'
	sit	pos.			

(MacLeod 1984: 248)

Somewhat less conclusively, she attributed the *-lah* affix to the Yukatekan language group by using the *-l* and *-ah* affixes to illustrate her point of a possible origin for this type of positional affixation.

Yukatek	(h) wa' (a)	-l -ah	-en	I stood up
	pos.	comp.	1SG.Abs	
N. Lacandon	nak	-r -ah	-en	I crouched

(MacLeod 1984: 243)

Although MacLeod uses examples from the Yukatekan language group to illustrate her point, she also supplies counter-arguments to a purely Yukatekan origin of the affix (*l*)-*ah* by stating that "An incomplete a>e vocalic shift is known in Cholan and Yukatekan that might account for the *-l-e* sequence in Cholan" (1984: 244). She also noted that there

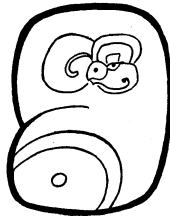


Figure 2.3. The *chum* logograph
(drawn by Anne Hruby).

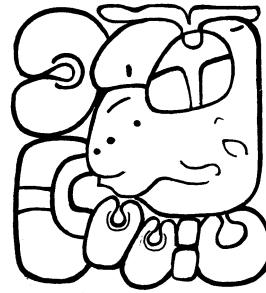


Figure 2.4. The *wal-ah* glyph
(drawn by Anne Hruby).

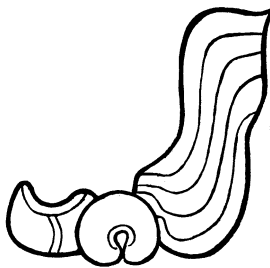


Figure 2.5. The *-wan* affix
(drawn by Anne Hruby).

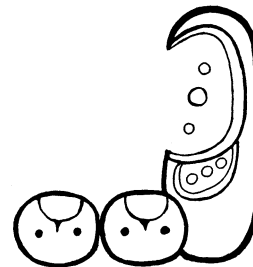


Figure 2.6. The *-laj* affix
(drawn by Anne Hruby).

was no clear pattern to the geographical distribution of the *-ah* morpheme, which made its origin suspect because of its appearance in distant areas where the Yukatekan languages were not spoken (MacLeod 1987: 72). Her suspicion of a non-Yukatekan origin for the intransitive positional in Classic Ch'olti'an proved correct because the *-l-* in Yukatek acts as a positional marker with its origin in Common Mayan, while the *-ah* affix serves as a completive marker in Yukatek. Thus, the combination of these affixes has no relation to the aforementioned historical linguistic processes that formed the Classic Ch'olti'an *-laj* affix. The separate morphemes of *-l-* and *-ah* were formed in different places at clearly different times. The *-ah* or *-aj* suffix recorded in the script has been shown not to have originated from Yukatekan, but from Eastern Ch'olan as a passive verbal affix deriving intransitives from transitive roots (see Lacadena, this volume).

The idea the *-l-* and *-ah* morphemes are not directly attested in the hieroglyphic script in the Yukatek form, supports Robertson and Houston's (1997) reconstruction of the *-laj* affix as an intransitive positional in Eastern Ch'olan. In addition, they have noted that T181 probably represents the *-ja* syllable, which is pronounced with a hard velar 'b' sound, not a soft glottal 'h' as was previously thought (Houston, Stuart, and Robertson, this volume). Thus, the intransitive positional affix spelled with *-la-ja* (i.e., T178 and T181) would be pronounced *-laj*, a form close to a Common Mayan pronunciation (Robertson and Houston 1997). The completive forms of these affixes, spelled as *-la-ji-ya* (also see Grube, this volume) and *-wa-ni-ya*, should be pronounced as *-la-ji:y* and *-wan -i:y*, respectively⁵ (Robertson and Houston 1997).

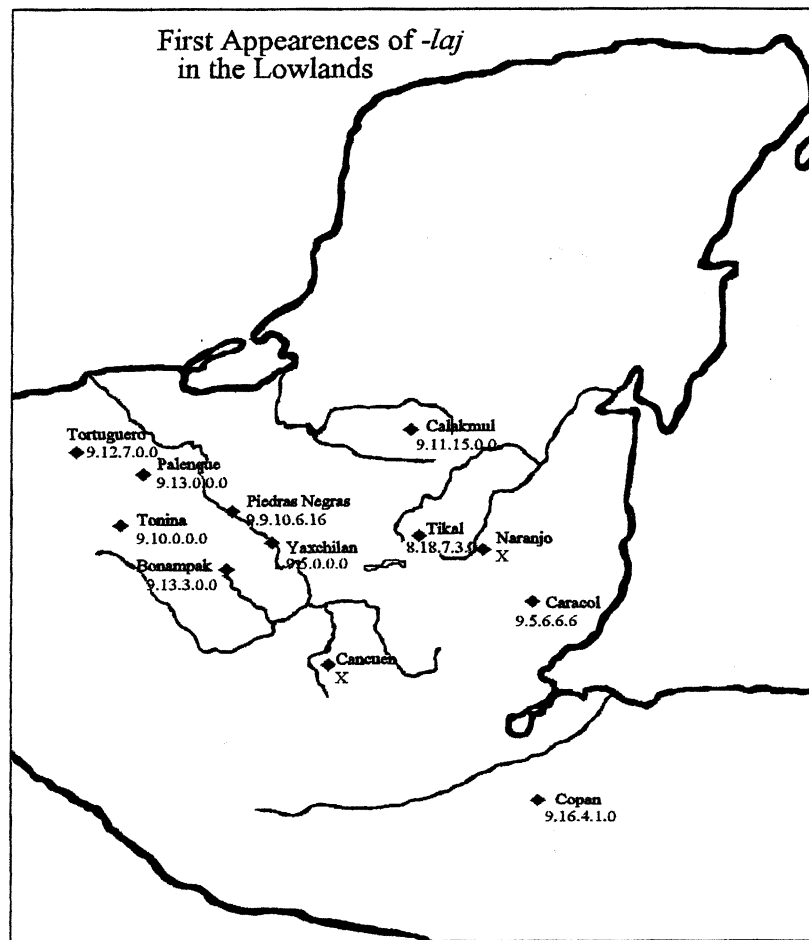


Figure 2.7. Distribution of the *-laj* affix.

The method we use to analyze intransitive positional affixes in the Classic Maya script is a type of distributional analysis that was first pioneered by Alfonso Lacadena in his work on the *u* glyph (1995). Distributional analyses are effective because it is possible to look at temporally deep linguistic processes happening over a large area that may not be accessible through the analysis of single texts (Hruby and Robertson 2001). However, when these historical changes are identified, they can then be examined on a site-by-site basis for specific context. This method can not only help create and refine linguistic models but also provide critical evidence for confirming or refuting theories that have been previously proposed.

The present distributional analysis reveals that the *-laj* affix is the earliest example of intransitive positional suffixation in the Classic Maya script, and is first attested in the

5. There is some dispute as to whether or not Maya glyphs were written in the completive or incompletive aspect. If the script was almost wholly written in the completive aspect, then the *-i:y* would be a clitic or tense marker and not a completive marker. Consequently, it is unclear whether the disharmony in the syllables (i.e., *wa-ni*) signals vowel length or represents a single argument predicate (SAP) marker.

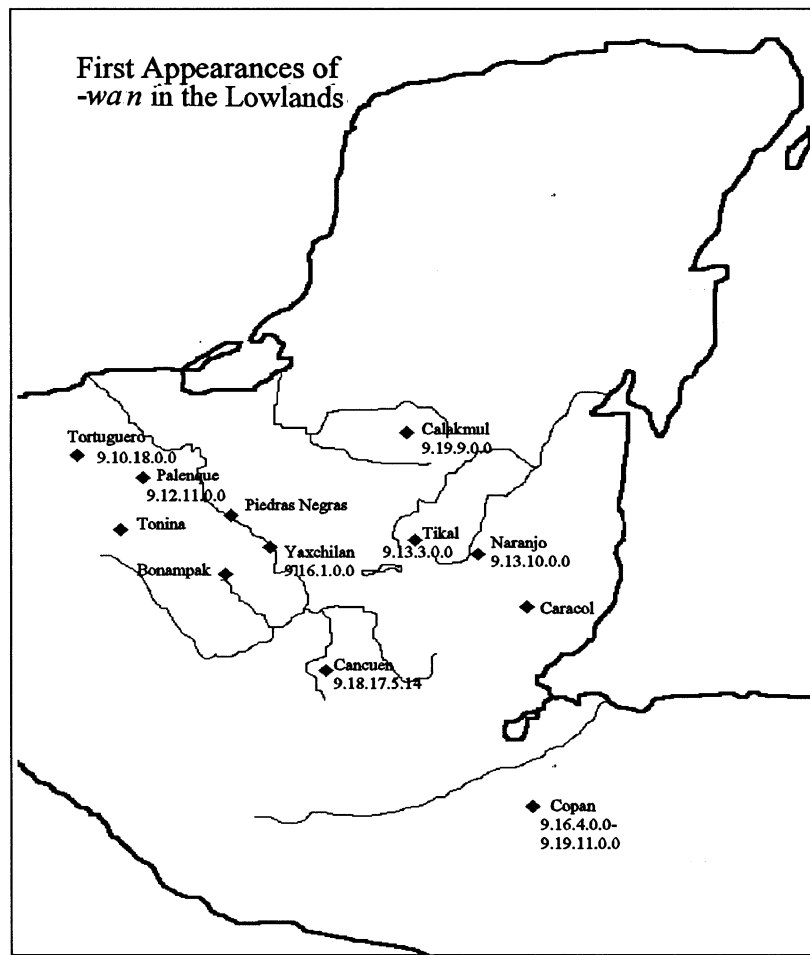


Figure 2.8. Distribution of the *-wan* affix.

central core zone around 8.18.0.0.0 (A.D. 396) (Figure 2.7) (Hruby 1996). However, there is some recent debate about whether these early positional suffixes are *-aj* rather than *-laj*. Lacadena has also noticed, for example, that the verb root *pat* on Tikal Stela 31 (D-27) probably features an *-aj* suffix. This would indicate that there was some overlap in positional usage between the earlier *-b...-aj* affix and the relatively newer *-laj* during the Early Classic as Robertson's model predicts (see above). Regardless of this possible overlap, examples of *chum-laj* can be found on baktun cycle-eight texts such as the Leyden Plaque and probably the "Hombre de Tikal," which probably puts the shift to *-laj* back into in the pre-Script language (Robertson, personal communication). Furthermore, an example of *pat* with transitive inflection occurs on Stela P from Copan, which suggests that it became an intransitive positional after that time. In fact, there is no evidence of *pat* being written as an intransitive positional until around 9.12 or A.D. 670.

Texts with attestations of the *-laj* affix start in earnest throughout the Maya lowlands at around 9.5.0.0.0 (A.D. 545). After a 40-year break on 9.10.18.0.0 (A.D. 645), the intransitive positional affix of *-laj* comes back into common usage, but this time with the addition of the newly imported *-wan* affix. Although the *-laj* affix is often used during this

transitional period, the *-wan* is first seen in the present-day Chontal-speaking region of the Usumacinta drainage, especially at Tortuguero and Palenque around A.D. 645 (Figure 2.8). After 9.13.0.0.0 (A.D. 692) the use of the *-wan* affix can be seen spreading up the Usumacinta River and to the rest of the Maya lowlands (Figure 2.8). This linguistic change appears to follow both riverine and overland trade routes across the lowlands, but is especially emphasized at river-based polities.⁶ A more extensive examination of these trade routes and their implications on the Chontal Maya and the rest of Mesoamerica is dealt with in another paper (Hruby 2001).

While the Chontal affix *-wan* was used at many sites throughout the Maya lowlands during the eighth century, Maya scribes also continued to use the traditional *-laj* affix during this period. Aside from a few examples found relatively early in the Late Classic, the *-laj* affix is used simultaneously with the *-wan* affix mostly in the southeast region of the Maya lowlands. The *-wan* affix appears to be the last intransitive positional used during the crucial time of the Classic Maya collapse. This is true at the site of Copan—part of the historical Ch'orti' region where the descendent languages of Classic Ch'olti'an are attested (Moran 1695; Wisdom 1961). The only intransitive positional affix attested in Ch'olti'an grammar during the colonial period is the *-wan* affix, which suggests that the extended use of *-wan* during the final years was key in replacing the traditional Classic Ch'olti'an *-laj* (Robertson 1992). This textual pattern not only expresses linguistic continuity but is also in line with Robertson's linguistic model of displacement in the intransitive positional category from Classic Ch'olti'an to Ch'olti' (Robertson 1998).

Historical Implications for the Classic Maya

While it is evident that a prestige language, such as Classic Ch'olti'an, reflects textual uniformity across large areas of linguistic diversity, it is rare to identify the geographical boundaries between common languages. There are, however, some indications as to the location of Chontal during the Late Classic period. Ethnohistorical documents securely establish Chontal speakers in the Usumacinta drainage area during the sixteenth century (Roys 1957; Scholes and Roys 1968). The existence of Chontal morphemes in the hieroglyphic texts of Tortuguero and Palenque suggests linguistic and geographic continuity from the Late Classic to modern times. This region appears to be one of the only areas in the Maya lowlands with evidence of a common language affecting the grammatical structure of the prestige language (also see Lacadena and Wichmann 2000, 2002 for other evidence of influence).

The use of *-wan* in the inscriptions of some polities coincides with important historical developments. We consider linguistic, textual, and archaeological evidence of Chontal influence to provide a better understanding of how and why this grammar change may have occurred. The historically rich and famous sites of Palenque, Tikal, and Copán will be reviewed as test cases to illustrate how *-wan* usage spread from start to finish.

6. There is also a possible late version of *chum-wan* at Coba', but the date of this monument and the glyph itself are unclear.

THE CHONTAL REGION

In the northwest region of the Maya lowlands, Palenque and Tortuguero provide the most examples of positional affixation from the time of the initial importation of *-wan* until the time of the last known inscriptions. At Tortuguero, we find the first appearance of *-wan* in the Maya lowlands around 9.10.18.0.0 (A.D. 650). Shortly afterward, it shows up in the texts of Palenque where it was probably used during the reign of K'inich Janab Pakal (A.D. 615–683). This is inferred from the few monuments recovered from the period of his reign. Nonetheless, it appears to be the primary type of intransitive positional inflection used in his burial texts on the Temple of the Inscriptions.

The historical implications of these data reveal links between Pakal and the Chontal language. For example, Pakal's father never used the Palenque *ajaw* title in the thirty years that Pakal and his mother probably ruled the polity. Emphasis on the female line at Palenque—and the general disarray associated with Pakal's accession—suggests that there was factional competition in Palenque's government at that time. We have proposed elsewhere that a possible cause of this disorder was that one of Pakal's parents may have been of Chontal descent (Hruby and Child 1998). If Pakal had blood ties to the Chontal Maya, then this may account for the prolific use of the *-wan* affix on the Temple of the Inscriptions. The vast increase in architectural construction, art, and inscribed history during Pakal's reign may have aided in validating his accession to the throne during “a highly volatile period in Palenque's history” (Schele and Freidel 1990). Nonetheless, Pakal was clearly a prosperous ruler, which indicates that whatever political maneuvering was carried out by his father and mother was successful.

The verb root *chum*, ‘to seat or sit’, was by far the most commonly used intransitive positional verb because of its use in acts of royal accession. Using Chontal inflection in these glyphic passages may have constituted an important political statement. We interpret the use of the *-wan* affix in the upper Usumacinta drainage area as a means to appeal to the exterior political forces such as subsidiary lords or neighboring communities that spoke a Chontal dialect. The fact that the texts of Palenque reveal a shift back to the more archaic positional affix of *-laj* after Pakal's death in A.D. 683 suggests that his son Kan Balam may have not had to deal with the same political pressures as his father. The use of the *-laj* affix also implies that the lineage may have been sufficiently established by the time of Kan Balam's accession around 9.12.11.12.10 (A.D. 684). Pakal not only had the responsibility of validating his right to rule to elite factions of Classic Maya but also had the burden of uniting the Chontal-speaking people of that region under his rule.

Pakal's accession marks the beginning of the spread of the *-wan* affix throughout the Maya lowlands. It can be assumed that a linguistic element, such as the *-wan* affix, would appear in regions close to his sphere of political control, such as Tortuguero. However, the appearance of *-wan* outside of Palenque's direct range of influence may indicate wider political and economic interaction with Chontal speakers than previously thought. How the Chontal affix actually spread remains largely unknown, but a few lines of archaeological evidence suggest that it may have been one of conflict and compromise.

A recent distributional analysis of warfare events in Classic Maya script provides further argument that Palenque, and the entire western area of the Maya lowlands, was in the midst of culture change from A.D. 633 to 692 (Child 1998, 1999; Hruby and Child

LONG COUNT	CALENDAR ROUND	GREGORIAN	SITE	TEXT
9.10.8.6.3	1 Akbal 6 Zip	18-Apr 641	Piedras Negras	Wall Panel
9.10.8.6.5	3 Chichan 8 Zip	20-Apr 641	Piedras Negras	Wall Panel
9.10.10.0.0	13 Ahau 18 Kankin	6-Dec 642	Palenque	Temple of Sun
9.10.11.9.6	13 Cimi 14 Zec	4-Jun 644	Tortuguero	Monument 6
9.10.12.3.10	10 Oc 18 Kayab	3-Feb 645	Tortuguero	Monument 6
9.10.14.13.0	10 Ahau 13 Mol	2-Aug 647	Yaxchilan	Stair 2 / Stair 3 - Step 5
9.10.15.4.9	4 Muluk 2 Cumcu	7-Feb 648	Dos Pilas	Stair 4 - Step 4
9.10.16.13.6	8 Cimi 9 Mol	28-Jul 649	Tortuguero	Monument 6
9.10.17.1.2	7 Ik 5 Kankin	21-Nov 649	Tortuguero	Sarcophagus
9.10.17.1.9	1 Muluk 12 Kankin	28-Nov 649	Tortuguero	Sarcophagus
9.10.17.2.14	13 Ix 17 Muan	23-Dec 649	Tortuguero	Monument 6 & 8/ Sarcophagus
9.10.18.8.8	6 Lamat 1 Zip	11-Apr 651	Palenque	Stairs
9.11.2.17.4	10 Kan 17 Yax	13-Sep 655	Tortuguero	Earring
9.11.6.16.11	7 Chuen 4 Chen	10-Aug 659	Palenque	House C
9.11.9.8.6	12 Cimi 9 Cumcu	10-Feb 662	Piedras Negras	Stela 35
9.11.9.8.12	5 Eb 15 Cumcu	16-Feb 662	Piedras Negras	Stela 35
9.11.11.9.17	9 Caban 5 Pop	2-Mar 664	Dos Pilas	Stair 2 east
9.11.16.11.6	5 Cimi 9 Pop	5-Mar 669	Piedras Negras	Stela 37
9.12.0.8.3	4 Akbal 11 Muan	11-Dec 672	Dos Pilas	Stair 4 - Step 3
9.12.5.2.11	2 Chuen 14 Mol	26-Jul 677	Yaxchilan	Stair 2
9.12.5.9.14	2 Ix 17 Muan	16-Dec 677	Dos Pilas	Stair 2 - Step 1
9.12.5.10.1	9 Imix 4 Pax	23-Dec 677	Dos Pilas	Stair 4 - Step 3
9.12.6.16.17	11 Caban 10 Zotz	3-May 679	Dos Pilas	Stair 2 - Step 2 / Stair 4 - Step 5
9.12.8.14.0	11 Ahau 3 Pop	24-Feb 681	Yaxchilan	Stela 19
9.12.8.14.1	12 Imix 4 Pop	25-Feb 681	Yaxchilan	Lintel 45 / Stair 3 - Step 3
9.12.10.12.4	6 Kan 2 Kayab	9-Jan 683	Dos Pilas	Stair 2 - Step 1
9.12.12.11.2	2 Ik 10 Muan	7-Dec 684	Dos Pilas	Stair 4 - Step 1
9.12.17.12.0	13 Ahau 3 Muan	29-Nov 689	Yaxchilan	Lintel 44

Figure 2.9. Distribution of warfare glyphs (after Child 1998).

1998). These warfare events, recorded throughout the Maya lowlands during the three katuns of 9.10.0.0.0 to 9.13.0.0.0, reveal a concentration of warfare in the western Maya lowlands during this period involving Tortuguero, Palenque, Piedras Negras, Yaxchilan, and Dos Pilas (Figure 2.9). This 60-year period indicates a pattern of political turmoil that intensified chronologically up the Usumacinta and Pasión Rivers just before *-wan* began to be used in local texts. The historical information associated with these warfare events suggests that they were not carried out on an interregional level, but that the chronological movement of warfare up the Usumacinta River may have been fought intraregionally. While political ties with Palenque and the Chontal-speaking Maya would have strengthened local economies through a more intensive control of trade routes, establishing those ties appears to have been a cause of local conflict.

Neutron activation analyses of fine-paste ceramics reveal that the polities of the upper Usumacinta and Pasión Rivers were forming new economic ties with the Chontal-speaking region (Bishop 1994). Recent research shows that fine-paste ceramics (i.e., Chablekal Fine Gray, Fine Brown, and Fine Cream), commonly found in Usumacinta and Pasión archaeological sites during the Late Classic, were actually produced in the Usumacinta Drainage area of the Gulf Coast region (Bishop 1994; Bishop and Rands 1982; Foias and Bishop 1994). The distribution of these fine-paste wares appears to follow the same spatial and temporal pattern as the linguistic and warfare data. They surface in the Palenque region by A.D. 650–700 (Rands 1973, 1974a, 1974b), then in the upper Usumacinta re-

gion by A.D. 720–750 (Holley 1984; Muñoz 2000), and finally in the Pasión region by A.D. 730–780 (Foias and Bishop 1997). The archaeological contexts of these Chontal-based, elite trade goods give credence to the idea that the intensification of warfare in the western lowlands (9.10–9.13, or A.D. 634–692), was influenced by economic factors. The increases in conflict, ceramic trade, and language change along the Usumacinta and Pasión Rivers all seem to be tied essentially to the Chontal-speaking region. Although it can be shown that these elements of material culture and language move generally from west to east, it is still unclear how and why rulers chose to use the foreign affix of *-wan* in their writing, especially at sites such as Tikal, where possible Chontal influences have not been thoroughly documented.

TIKAL

The pattern of intransitive positional use at Tikal is very different from the trend at Palenque and Copán. Because the *-laj* affix can be linguistically reconstructed from Common Mayan to Classic Ch'olti'an, we would expect to find the earliest use of this affix in the central core zone of the Maya. Indeed, this pattern is found at Tikal, where not only some of the earliest texts have been detected but also the earliest recording of the *-laj* affix inchoate in Classic Ch'olti'an. Early Tikal texts, such as the Leyden Plaque and possibly the Hombre de Tikal monument, suggest that the *-laj* affix was adopted at or before 8.18.0.0.0 (A.D. 396). It becomes the dominant intransitive positional affix used throughout Tikal's history. The Chontal *-wan* first appears around 9.13.3.0.0 (A.D. 695) in the same text as *-laj*, revealing that the linguistic overlap did exist to some degree there (see Tikal Lintel 3 in Jones and Satterthwaite 1982).

This first and only known example of *-wan* at Tikal coincides with an interesting historical pattern that occurs during the same time period. Schele and Freidel argue that before Jasaw Chan K'awiil acceded to the throne in A.D. 682, Tikal went through about 120 years of “broken history” and “darkness” after its initial defeat in war to Caracol (1990: 211; Jones and Satterthwaite 1982). Schele and Freidel argue that the main event that turned Tikal's political history around was Jasaw Chan K'awiil's victory in war against Calakmul in A.D. 695. Interestingly, this victory is recorded on Lintel 3 of Temple 1 where the sole known example of *-wan* is used at Tikal.

It is possible that the *-wan* affix marks political ties to the Chontal region before and after the defeat of Calakmul. Schele (1994b) notes that Nuun Ujol Chaak or Shield Skull came to Palenque in A.D. 659 during his possible exile from Tikal after a defeat at the hands of Calakmul (Martin and Grube 2000). Palenque was involved in several wars with Calakmul, in which their last war in A.D. 659 marked a victory for Palenque over Calakmul (Child 1998; Martin and Grube 2000). This common dislike for Calakmul may have forged an important alliance during the resuscitation of the Tikal polity, perhaps reflected in the appearance of *-wan* on the monument recording Jasaw Chan K'awiil's pivotal victory over Calakmul 35 years later. After Tikal's political and economic situation revived, the positional affix that they used exclusively was the traditional *-laj* affix.

COPÁN

A similar political crisis associated with the *-wan* affix seems to have occurred at Copán. After Waxaklahun U-Ba:h K'awi:l (18 Rabbit) was captured and beheaded by the ruler K'ahk Tiliw Chan Yo'aat (Cauac Sky) of Quirigua in 9.15.6.14.6 (A.D. 738), a ten-year lull or “decentralized” period of monument erection took place under the auspices of the next king, Smoke Monkey (Fash 1991: 135). After Smoke Monkey's short reign, the fifteenth ruler, Smoke Shell, seems to have used a more proactive tactic (Fash 1991: 135). The historical pattern that emerges with Smoke Shell appears to be similar to that of Jasaw Chan K'awiil in that his main goal was probably to revive Copán to its former glory. The abundant use of the *-wan* affix by Smoke Shell around A.D. 755 may reflect his interest in strengthening political alliances with the Chontal-speaking region. This strategy is verified in Copán inscriptions through his “judicious political marriage” to a queen from Palenque (Schele and Freidel 1990: 319; Martin and Grube 2000). She ultimately bore him a son destined to become the sixteenth *ajaw* of Copán.

Although the traditional *-laj* affix was not written extensively during Smoke Shell's reign, it came back into use when his son Yax Pasaj acceded to the throne. The pattern of intransitive positional usage did not mirror that of Tikal, however, because *-wan* continued in use simultaneously with the *-laj* affix. This linguistic overlap during the reign of Yax Pasaj reveals a period of language change in process. The *-wan* and *-laj* affixes are both used frequently on the Hieroglyphic Stairway and may have been included by the same scribe, but the latest examples of intransitive positional affixation exclusively feature *-wan*. Because the only intransitive positional affix attested in Ch'olti'an grammar during the colonial period is *-wan*, the extended use of this affix during the time of the collapse was probably key in replacing the traditional Classic Ch'olti'an *-laj*.

According to the epigraphic record of each of these sites, the use of the different intransitive positional affixes seems to vary according to changes in economic and political control, or affiliation. The accession of a new king may have resulted in an influx of new scribes, new sets of politico-religious rituals, and new economic strategies. While the scribes themselves could have introduced personal innovations to the way the glyphs were written, it is more likely that other, more politically oriented forces were at work when the grammar of local texts was changed. Glyphs, like scribes, may have been used for political gain, where the maintenance of political ties depended on the way the sacred language was expressed publicly. Changes in grammar, used in recording important royal acts and mythological events, can be seen as markers of ethnic diversity or factional conflict within local governments. Kings and competing factions may have used writing as a political tool, not unlike the display of a particular implement of regalia, such as the Teotihuacan War Serpent headdress (Taube 2000).

Conclusion

This paper has reviewed the full evolution of the intransitive positional from its origins in Common Mayan to Greater Tzeltalan, the pre-Script, Classic Ch'olti'an, and, finally, to Chol'tí and Chortí. Special emphasis has been placed on the *-wan* affix as an indicator of Chontal influence. While ethnohistorical documents securely establish Chontal speakers

in the Usumacinta drainage area during the sixteenth century, the appearance of Chontal morphemes in the inscriptions of Tortuguero and Palenque indicates that this region was inhabited by Chontal speakers as early as the beginning of the Late Classic period. Nonetheless, the dominance of Classic Ch'olti'an in the texts of the Usumacinta drainage area supports the idea that it was used by the local Maya elite as the prestige language. The transmission of Chontal influence indicates that there is a correlation between language change, material culture, and political shifts in Classic Maya polities. Although the *-wan* affix seems to be an import from an early version of Chontal Mayan, it is still unclear what the mechanism of language change is, and why it happened. The historical circumstances that co-occurred with *-wan* usage proposed here are tenuous and hypothetical at best. They must be verified or refuted through continued research and debate.

The binding of epigraphy, historical linguistics, iconography, and archaeology is a pathway to a much deeper understanding of linguistic and social change in Classic Maya society. This method is more interesting from an anthropological point of view, because we can begin to answer questions of how and why language change happened, and what the roles of kings, scribes, and commoners were in the dynamic past of the Maya.

THREE

The Languages of the Dresden Codex

Legacy of the Classic Maya

ROBERT F. WALD

University of Texas at Austin

Views Concerning Its Place of Origin and Language

For both historical and linguistic reasons, the northern portion of the Yucatan peninsula has been considered the place of origin for the Dresden Codex.⁷ Besides written references to books brought back to Europe by conquistadors and priests, Thompson (1972: 16) also noted linguistic clues. “Certain glyphs, for example the *kintunyaabil*,⁸ drought glyph, correspond to the Yucatec language, not to the Choloid languages spread across the base of the peninsula.” His reading of the “drought glyph” (as *kintunyaabil*), although based on a misinterpretation of some of the individual glyphs themselves, has, especially after the correction by Fox and Justeson (1984: 52), withstood the test of time.⁹

The place of origin of the Dresden Codex itself is not called into question here. However, the question has led to more general statements concerning the language of the Dresden Codex, which often amounts to the conclusion that the language in the Codex is Yukatekan (cf. Campbell 1984: 5; Hofling 1989: 51). Morley, Brainerd, and Sharer (1983: 530) demonstrate phoneticism by beginning with this hypothesis among several others: “The codices are twelfth- to fourteenth-century Yucatec.” Coe (1980: 164) states that the four codices are “surely to be read in an archaic Yucatec.”

Despite the generally accepted opinion that the Dresden Codex was written in some form of Yukatekan, most would also agree that it was based on earlier books written

7. This essay is essentially the same version as the one that has been circulating in manuscript form since 1994 among epigraphers. A number of notes with updated information have, however, been added during 2000–2002. These are introduced by “added:” in square brackets.

8. Note that when quoting directly from other sources including dictionaries, the orthography of that source will be preserved. Otherwise, the orthography of the Academy of the Mayan Languages of Guatemala will be followed.

9. [Added:] Thompson’s conclusion that this particular phrase favored Yukatek over Ch’olan, however, has not withstood the test of time. As Lacadena (1996: 6–7) notes, the phrase as written in the codex makes perfect sense, for example, in modern Ch’ol as well.

during Classic Maya times (cf. Thompson 1972: 15; Morley, Brainerd, and Sharer 1983: 434). This viewpoint is also supported by the presence of long-count dates that correspond to the Classic period, for example 9.9.16.0.0 on page 24 of the Dresden Codex, preceding the Venus table. Others have found Ch'olan remnants in words or spellings, such as *och* instead of *ok* in the meaning of 'to enter' (Linda Schele, personal communication, 1994).

In the area of verb inflection, there seems to be even less agreement as to which language best reflects the forms found in the Dresden Codex. Hofling (1989: 52), in his discussion of discourse structure in the Dresden Codex, notes that "unlike the modern Yucatecan languages, the hieroglyphs do not consistently distinguish between transitive and intransitive verbs in the incompletive aspect. . . . An additional difficulty is that no hieroglyphic marker for passive verb forms has been positively identified." These conclusions are based partly, according to Hofling, on the interpretation of the grammar of the Maya hieroglyphs presented by Victoria Bricker.

When faced with all the conflicting verbal inflection in the Dresden Codex, one approach might be to conclude that the scribe (or scribes) was not very interested in showing or using all the correct grammatical forms. Instead, his main interest could have been in just presenting a message, whether ritual or astronomical or both. The implication is that one can understand the text quite well without the grammar, and, since the scribe was not concerned with it, there is little to be gained by spending much time trying to figure it out.

On the other end of the spectrum is another approach. It is driven by the conviction there must be some sense to make of the grammar in the Dresden Codex since there are a number of prefixes and suffixes used on both nominal and verbal forms throughout the text. If they were meaningless and irrelevant, why would they be used at all? What is more, they all appear within the covers of one book and so must represent at least parts of a grammatical system of the language in which the book was written. Victoria Bricker (1986: 186) has shown what can be accomplished with these assumptions as illustrated in her summary of the verb-inflection patterns in the Maya script:

Active root transitives are marked by *-Vw* (imperfective) and *-ah* (perfective) suffixes. Passive and middle voice stems take $\emptyset$ (imperfective) and *-ah* (perfective) suffixes. Imperfective antipassive stems without incorporated nouns are marked by *-Vl*; the inflectional suffixes of incorporated antipassive stems are $\emptyset$ (imperfective) and *-ah* (perfective). Transitive verbs derived from nouns apparently occur with *-an* and $\emptyset$ (perfective) suffixes. Root and derived intransitives seem to take the same inflectional suffixes as passives and medio-passives. The imperfective stem of positional verbs is marked by $\emptyset$ and the perfective stem by *-l-ah* or *-wan*.

No space will be taken here to demonstrate the individual validity or invalidity of these interpretations by referring to actual texts. What Bricker has created, in effect, is a grammatical construct that could be used for both Classic inscriptions and Postclassic codices with equal effectiveness. In fact, she notes that "no one Classical or Modern Mayan language has a system of nominal and verbal inflections exactly like the one I have identified in hieroglyphic texts" (Bricker 1986: 166). But the problem with her interpretation cannot be explained through an analogy to the difference between Chaucerian and

Modern English as she does (Bricker 1986: 166). Instead, it would be more like taking the verbal inflection represented in a group of French and Spanish texts and creating a new grammatical slot for all the suffixes that do not agree with each other. But even this analogy is not strong enough, for the inflectional endings of French and Spanish are more similar than those of Classic Ch'olan and Postclassic Yucatekan that form the real basis of her new unified grammar.

Bricker had good justification for doing what she did. Her frequent reference to the Dresden Codex and comparison of its texts with the Classical inscriptions provide all the justification she needed. In fact, except perhaps for the *-wan* positional ending, all of the inflectional suffixes she mentions in the extended quote appear in the Dresden Codex. All one needs is the assumption that the Dresden Codex is written in one specific language and her grammar will provide a slot for most of its inflectional suffixes. That doing so also provides slots for most of the suffixes used in the Classic inscriptions should give us reason to pause!

Instead of agreeing with Bricker that the language of the Classic inscriptions and the Dresden Codex are basically the same or that, at any rate, their verbal inflection matches almost perfectly, at least one other option is open. The Dresden Codex may have been written in more than one language! This is the option that is pursued in this essay.¹⁰

Overall Structure of the Codex

Before I begin the detailed investigation, it is very important to note that the Dresden Codex is made of various sections, each quite different from the others. Thompson (1972: 20), taking the lead of Gates (1932), but making a few changes, counts thirteen rather than eight different general sections as shown in Table 3.1. His terminology is used here without necessarily implying agreement with the connotations some of the titles may imply.

In addition to this breakdown, Gates (1932) also numbered each of the almanacs from 1 through 75. Thompson (1972) retained this system, adding only one that had been missed and numbering it 58a to preserve Gates's original sequence. Both these "almanac" numbers and the page numbers are used to refer to particular portions of the codex. Thompson also called each separate section or compartment in an almanac a "*T'ol*" and numbered them consecutively within each almanac. In many cases, a *T'ol* comprises an illustration with a text above it. Sometimes it is made up only of text. In the original, each of these segments was often divided by a dotted red line. The term "*T'ol*" is used in this essay (without italics) where necessary as a reference aid.

It is important to note that the divisions among almanacs are by no means artificial. Almost all of them are made up of several scenes accompanied by text. They start with or

10. [Added:] Please note that it was not the main purpose of this essay to introduce new syllabic or logographic decipherments, to provide new readings for inflectional suffixes, or even to provide new translations of words based on established syllabic and logographic readings. Therefore, unless stated differently, I do not claim to have been the modern originator of any of those discussed. I have also not identified the originator of every syllabic and logographic decipherment or every grammatical or lexical interpretation used here since doing so would needlessly lengthen this essay. Such information is readily available from sources dealing directly with such issues. I have sometimes made explicit references in the notes, usually when the accepted transcriptions or translations have changed in the intervening years.

TABLE 3.1. J. Eric Thompson's Division of the Dresden Codex (1972)

1. Miscellaneous Almanacs, Series 1:	1–15
2. The Moon Goddess	16–23c
3. Miscellaneous Almanacs, Series 2	22a–23b
4. The Planet Venus	24, 46–50
5. Lunar Tables	51–58
6. Multiples of 78	58–59
7. K'atun Prophecies	60
8. Serpent Numbers and the 7 x 260-day Almanacs	61–73
9. A Torrential Downpour	74
10. Year Ceremonies	25–28
11. Farmers' Almanacs: the Chaks	29–45c
12. Multiplication Table and the Sky Beast	43b–45b
13. Multiples of 364	45a

are accompanied by day names and numbers in the 260-day calendar. They usually contain distance numbers to lead the reader from one scene and text to the next and then back again until the full period count, or a portion of it, has been completed. Although sometimes sharing characteristics with the surrounding almanacs, each is often different both in theme and vocabulary.

Certain sections are quite different from the others. Several of them contain “long counts,” “ring numbers,” and “distance numbers,” the first and last of which are common in the monument inscriptions as well. At any rate, significant distinctions among the various sections and even among the almanacs within some sections could be made based on specific internal characteristics of the texts without doing any apparent harm to the basic unity of the codex. In fact, most of the individual almanacs seem to refer to different types of events, rituals, or ceremonies.

Although it is a volume unified by more than merely composition on the same long piece of *amate* paper, the Dresden Codex also provides a wealth of internal evidence for clear divisions between and within each of its various sections. This has been noted by several scholars in the past, but they have not made these distinctions based on the language of the text itself. Demonstrating the basic legitimacy of some form of this approach is the concern of the remainder of this essay.

Methodology and Resources

It has already been mentioned that scholars have found individual words indicating evidence of external linguistic influence on the presumed Yukatek-speaking scribe(s) of the Dresden Codex. One could consider these occurrences on a par with the illustrations and names of Nahuatl Gods in the Venus Tables. The drawings of Gods very much like three of those known from central Mexico appear along with their names, spelled phonetically by the scribe: *Tawisikal*, (*Chak*) *Xiwitel*, and *Kakatunal* (cf. Whittaker 1986; Grube 1989b; Taube and Bade 1991).¹¹ Yet the rest of the text and most of the other deities are clearly Mayan. Even someone with only a cursory knowledge of Maya hieroglyphic writing would not find this cause to conclude that the Dresden Codex was written in Nahuatl.

Just as in the case of the Nahuatl God names, the mere appearance of some Ch'olan words in a portion of the text would not be sufficient reason for considering it to be written in Ch'olan. However, the close relationship between Ch'olan and Yukatekan, considered to be language families, would make distinguishing between the two in much of the text more difficult. Many of the same words exist in both language families. From the standpoint of scholars, the problem is exacerbated by the disproportionate availability of good published dictionaries in the two language families. Yukatek is much better represented, especially for colonial times, than are the Ch'olan language and its immediate relatives although some recent dictionaries (Josserand and Hopkins 1988b for Ch'ol and Laughlin and Haviland 1988 for Tzotzil) have helped the situation somewhat. At any rate, the mere absence of a certain word or related words and their associated meanings in a dictionary is not a guarantee that the word did not exist in that language. If this is true in general, it is even more likely for Ch'olan, where the linguistic resources are more limited. Also, if the two languages under scrutiny were unrelated or only remotely related, the absence of a particular word in the available sources would also carry more weight. Ch'olan and Yukatekan are not only traceable back to a common source but have also participated in extensive borrowing, especially in the direction of Ch'olan to Yukatekan (cf. Campbell 1984: 7).

Because the mere presence or absence of a word in dictionaries is not the most reliable method of determining the language in which a text is written and because borrowing has taken place between the two subject languages, other methods will have to be employed to reliably determine which language may be represented in a particular hieroglyphic text. In this investigation, the evidence presented depends on differences caused by independent linguistic developments or transformations in three different areas: vowels, consonants, and verbal inflection.

Vowel Shifts

The first area of possible language differentiation to be evaluated here is vowel contrast or shift.¹² Of the three being considered, it is perhaps the most volatile even within the

11. The orthography of the Academy of Mayan Languages will be used throughout except when quoting from other sources. In those cases, the orthography of the original will be retained.

12. While Campbell (1984: 14) seems to think these "were mostly ignored in the early stages of phoneticism," perhaps the opposite is the case, at least where syllabic spellings are concerned. Such change between consonant and vowel pairs might easily vary in a written language using an alphabet. But, leaving logograms aside, in a written language where the basic building blocks were glyphs each representing syllables made up (from our viewpoint) of a consonant and a vowel, there would likely be little tolerance for vowel shifts between them. Instead, their very definition and usage would depend on the solidarity of the whole syllable as a unit. A change in either the consonant or the vowel, either of which in an alphabetic system is usually one of at least two parts, would be for them a switch between two different glyphic entities. So while the languages may often undergo vocalic shifts, it is unlikely that the syllabic glyphs themselves would change with them. Instead, the result would be writing them with different syllabic glyphs to reflect the language or dialect in current use. A change in the vowel of a CV-glyph in a syllabic system would resemble more closely a change in the pronunciation of a letter in our writing system, as if, for example, one decided to use "t" for /g/ instead of the letter "g." It is this characteristic of both alphabetic and syllabic systems that tends to preserve the value of letters throughout the history of a language

TABLE 3.2. Ch'olan Shift from Long Mid to High Vowels According to Campbell (1984:14)

Proto-Mayan	Ch'olan	Yukatekan
*i	i	i
*i:	i	ì:
*e	e	e
*e:	i (e)	è:
*o	o	o
*o:	u (o)	ò:
*u	u	u
*u:	u	ù:

same language group and so may be the least trustworthy for making decisions regarding language identity. Campbell (1984: 14) lists the shifts shown in Table 3.2. He does not include the vowel /a/, but in the case of the most commonly used preposition, Kaufman and Norman (1984: 139) imply a change from proto-Mayan **tya* to Tzeltalan **ta* to **tä* in proto-Ch'olan (although **ti* is also allowed as an *allophone*): “**tä* - preposition (Chn; Chl, Cht, [**ä > i*]; Acl, Chr [*a~i*]). pM **tya*; Tz **ta*.” Although not relevant to their study, it is important to note here that the corresponding vowel in Yukatek would be /i/, resulting in *ti*, which matches the allophone they suggest for proto-Ch'olan.

The examples provided by Campbell (1984: 14) that indicate a Ch'olan (or Tzeltalan) shift from proto-Mayan include the following: “pM **ke:j > pCh *chih* ‘deer’; pM **b'e:h > pCh [*bih]*¹³ ‘road’; pM **to: ñ > pCh *tun* ‘stone’; pM **so:tz > pCh *sutz* ‘bat’; and **o:x > pCh *ux* [‘three’].”

Because of the extensive borrowing by Yukatekan from Ch'olan, some of the vocabulary that might seem critical for distinguishing the languages in the Dresden will not be relevant. This would include such words as *tun*, *kutz*, *chak*, *chuwén* and others that were taken into Yukatekan from Ch'olan and still retain much of the same meaning along with the Ch'olan sound shifts.

B'ih

The distinction between *b'eeh* in Yukatek and *b'ih* in Ch'olan, both meaning ‘road’, is quite clear. In the Cordemex, Barrera Vásquez (1982: 86) lists only *be* and *beeh* for Yukatek. Likewise in the Motul, Martínez Hernández (1929) has entries for *be* and *beel* meaning ‘road’, but the entries for *bi* and *bij* have completely unrelated meanings.¹⁴ However, *bij* is given as meaning ‘road, path’ in Ch'ol by Josserand and Hopkins (1988b: NAH 16IV,4) and ‘camino’ by Aulie and Aulie (1978: 32). The entry by Morán (1935:

and even between languages. While the sounds themselves may vary from time to time and place to place, the written letters or syllables seldom switch places. (English script, however, is notorious for keeping spellings that reflect historical rather than current pronunciations.)

13. Note that the source simply repeats the proto-Mayan word instead of providing the proto-Ch'olan reconstruction in this case. That is surely a typographical error, a conclusion that reference to entry number 049 in the article by Kaufman and Norman (1984: 117) corroborates.

14. *bi*: “*partícula del que concede lo que otro le está contando*”; and *bij*: “*algodón aderezado para bilarlo*” (Martínez Hernández [1930: 147]).



Figure 3.1. Two occurrences of **ta-b'i-hi**, *ta b'ih* 'on the road'.
(a) Almanac 70, p. 65b, T'ol 3. (b) Almanac 67, p. 41c, T'ol 4.

14) for 'camino' is *bihil*. Wisdom (1950b: 585) has several entries for *bihir* with the meaning of 'road, trail, route'. Finally, the Acalan-Chontal document uses both *bij* and *bihil* with the meaning of 'camino' (Smailus 1975: 130).

Figure 3.1 reproduces two T'ols which include examples of the Ch'olan word for 'road'. The illustration in Figure 3.1a clearly shows Chak walking on a road with a bundle on his back. But the text does not use the T301 footprint glyph **B'EH/B'IH**. Instead it uses T585 (Quincunx) **b'i** and T60c **hi** to form the word *b'ih* for 'road'.¹⁵ The first three glyph collocations can be read as *an ta b'ih chak* in Ch'olan, which translates as '[On this day] Chak was on the road'.

The reading of the text in Figure 3.1b is similar, *wa'an ta b'ih chak*, 'Chak was positioned on the road'. Most important, the word *b'ih* is used instead of *b'eh* for 'road'.

15. [Added:] Both T301 (Footprint) and T585 (Quincunx) are identified in de Landa's "alphabet" as "b" (cf. G. Stuart 1988a). The value of the vowel portion of the syllables in each case is not stated. In the case of another consonant for which two examples were given, "L," they have since been demonstrated to represent two different syllables, *le* and *lu*. It is not likely that the value of these two syllables changed from the Classic period to the time the Dresden Codex was created. The value of T585 in the Classic period text was syllabic *b'i* and the likelihood is that it retained this syllabic value in the codices. Although the presence of T301 in de Landa's alphabet apparently indicates that it was then viewed as a syllable, it seems to have been used instead as a logogram for 'road' during Classic and Postclassic times. Its occurrence in the illustration itself without accompanying syllabic signs helps to corroborate its logographic character. As a logogram, its value could be either **B'EH** or **B'IH** depending on the language that was being written. The move from being a CVC logogram to a CV syllable occurred for various signs both before and throughout the Classic period. This may have happened as well for T301 sometime in the Postclassic period prior to its having been recorded in de Landa's work.

Ta

Another word that occurs in both of the T'ols illustrated in Figure 3.1 is *ta*. One of the main uses of *ta* in some of the Ch'olan languages is as a locative preposition with the general meaning of 'in, at, on, to,' etc. Kaufman and Norman (1984: 139) reconstruct it as **tä* for proto-Ch'olan. Wisdom (1950b: 658–59) gives a large number of Ch'orti' examples in which *ta* is used in phrases indicating its meaning as 'in, on, at.' Josserand and Hopkins (1988b: NAH3VI,1) show *tä* being used with a similar meaning only in two specific phrases, *ta noj* and *ta tz'ej*: 'on the right' and 'on the left'. Smailus (1975: 168) indicates that *ta* also meant '*en, a*' in Acalan Chontal.

In Yukatek, the word *ta* is included in the Cordemex with a similar meaning only for use with the second person (Barrera Vásquez 1980: 748). It is actually a combination of the preposition *ti* and the second person pronoun *a*. It is exactly parallel with *tu*, which is a combination of the preposition *ti* and the third person ergative pronoun *u*. The word *tu* means 'in/at his/her/its ...' and *ta* means 'in/at your ...'. So it is really *ti* that is the preposition meaning 'in, at, on, to' and as such it is used in contexts similar to those for *ta* in the Ch'olan languages as just described. *Ta* is not a general preposition meaning 'in, at, on, to' in Yukatek.

But the matter is not that simple. While Yukatek does not use *ta* except as a contraction for *ti a*, several Ch'olan languages do use *ti* with the meaning of 'in, at, on, to'. This is especially true of Ch'ol. Josserand and Hopkins (1988b: NAH3VI,5) present a number of phrases representing different prepositions all beginning with *ti*, for example, *ti mal*, 'inside of' and *ti pat*, 'in back of'. In Ch'olti', Morán (1935b: 26) shows *ti* being used primarily in that sense, giving it as the word corresponding to '*en*' although *tama* is presented as '*entre*' or '*inside*'. Wisdom (1950b: 670) gives 'in, on, from, pertaining to' as the meaning of *ti* in Ch'orti and provides some examples quite similar to those he also provides for *ta*. Finally, Smailus (1975: 171) calls *ti* a preposition in Acalan Chontal and gives it the meanings '*en, a, con; refriendo a.*'¹⁶

The conclusion to draw from this is that while the use of *ta* as a preposition meaning 'in, on, at, to' in the Dresden would clearly point to a Ch'olan language, the presence of *ti* would tend to leave the question undecided in particular instances since *ti* is widely used in both language families. With this in mind, the most important task for the purposes of this investigation is to note all those instances in which *ta* is used in the sense of a locative preposition meaning 'in, on, at, to'. This is the case in 19 different T'ols. Two of them can be seen in Figure 3.1, for which suggested transcriptions and translations have already been given. In each case, *Chak* is *ta b'ih* 'on the road'. Several more of them are shown in Figure 3.2. The rest of them will be listed and some can be examined in later figures in this essay.

Figure 3.2a contains one of the most blatant uses of *ta* as a preposition in the Dresden Codex. Not only does it appear in the text but also in the actual illustration itself. The first three glyphs transcribe as *an ta hem chak* which can be translated as '[On this day] *Chak*

16. Note that Macri (1991) points out that only in a very few cases is *ti* actually used in the same meaning as *ta* in the *Paxbolon Maldonado Papers*. *Ta* is by far the most commonly used preposition meaning 'in, at, on, to', etc. Although *ti* does occur with this meaning, it is not common.



Figure 3.2. Some examples of the preposition *ta* in the Dresden Codex. (a) Almanac 70, p. 69b, T'ol 13. (b) Almanac 70, p. 65b, T'ol 2. (c) Almanac 70, pp. 66b, T'ol 4. (d) Almanac 70 p. 66b, T'ol 5. (e) Almanac 69, p. 68a, T'ol 10. (f) Almanac 67, p. 40c, T'ol 1. (g) Almanac 61, p. 40b, T'ol 7.

was in the valley.’ The glyph in the illustration on which *Chak* is sitting repeats the *ta hem* portion of the text. The next three examples in Figure 3.2b, 3.2c, and 3.2d appear in the same order in the codex with Figure 3.1a between them. These are the transcriptions of the first three glyph collocations of each of these T’ols followed by their translation, 3.2b: *an ta om chak*, ‘*Chak* was on the foam’; 3.2c: *an ta chan*,¹⁷ ‘[On this day] *Chak* was on the sky’; and 3.2d: *an ta witz chak*, ‘[On this day] *Chak* was on the mountain’. The last glyph collocation in Figure 3.2e is *ta ha’al*, ‘in the rain’. The first three collocations of Figure 3.2f can be transcribed as *wa’an ta ha’ chak* and translated as ‘[On this day] *Chak* was positioned in the water’ and in 3.2g the first two are *ta chan chak*, that is ‘[On this day] *Chak* [was] in the sky’.

Other examples of *ta* used in a similar way can be found in the Serpent Numbers Section on page 61 at B17; in Almanac 70 page 68b T’ol 12; Serpent Numbers on page 70 at D14; Almanac 74 on page 73a at D4; Almanac 75 on page 72b at B1; Almanac 55 on pages 32a T’ol 1, 33a T’ol 2(?), 35a T’ol 1; Almanac 59 on pages 34b T’ol 6 and 35b T’ol 8; Almanac 56 on page 40a T’ol 3; and Almanac 57 on page 43a T’ol 3.

Ti

In other texts, the preposition *ti* plays the same role. Several examples are shown in Figure 3.3. The themes of the passages in which *ti* appears as the preposition are quite similar to those in which *ta* appears. In Figure 3.3a, the first three glyphs read *an ti yax te’ chak* which can be translated as ‘(On this day) *Chak* was in the ceiba tree’. Figure 3.3b can be transcribed as *winik ta’jol (?) ti chan k’uh* which in English may be ‘The vulture man (?) [was] on the sky god’. The other texts in Figure 3.3 can be transcribed and translated as follows, 3.3c: (first 3 glyph blocks) *wa’laj ti kab’ kun {ch’een}¹⁸ k’an chak*, ‘[On this day] the yellow *Chak* stood on the earth seat {hole, valley, cliff}’; 3.3d: *uwa’an chak yotoch (or yotot) ti tan*, ‘[On this day] the position of *Chak* [was] the house in the center’; and 3.3e: (first three glyphs) *uwa’an chak ti hem*, ‘[On this day] the position of *Chak* [was] in the valley’.

In addition to those illustrated in Figure 3.3, prepositional phrases employing *ti* can be found in Almanac 55 on page 36a T’ol 3; Almanac 59 on page 35b T’ol 1; Almanac 61 on pages 38b T’ol 1, 38b T’ol 2, 39b T’ol 6, and 40b T’ol 7; Almanac 65 on page 33c T’ol 8; Almanac 66 on page 33c T’ol 1, page 36c T’ol 11; and elsewhere.

17. Of course, if one concludes that this passage was written in Yukatek instead of Ch’olan, *chan* would be *kan*. Since the word for ‘sky’ is written here with a logogram, either value is theoretically possible. There are also other logographs transcribed in this study for which such a difference is present. In most cases, the transcription of the logogram will conform to the hypothesis concerning the language represented in a particular passage without further commentary or footnotes.

18. [Added:] Square brackets will be used to indicate a comment or change made in the essay in 2000. These have been kept to a minimum and usually involve new decipherments that are not critical to the argument being made. Usually they are included to avoid the distraction that an outmoded decipherment may cause for the current reader. In this case, the new decipherment of *ch’een* ‘hole, cave, valley, cliff’ has been recently suggested by David Stuart (personal communication).

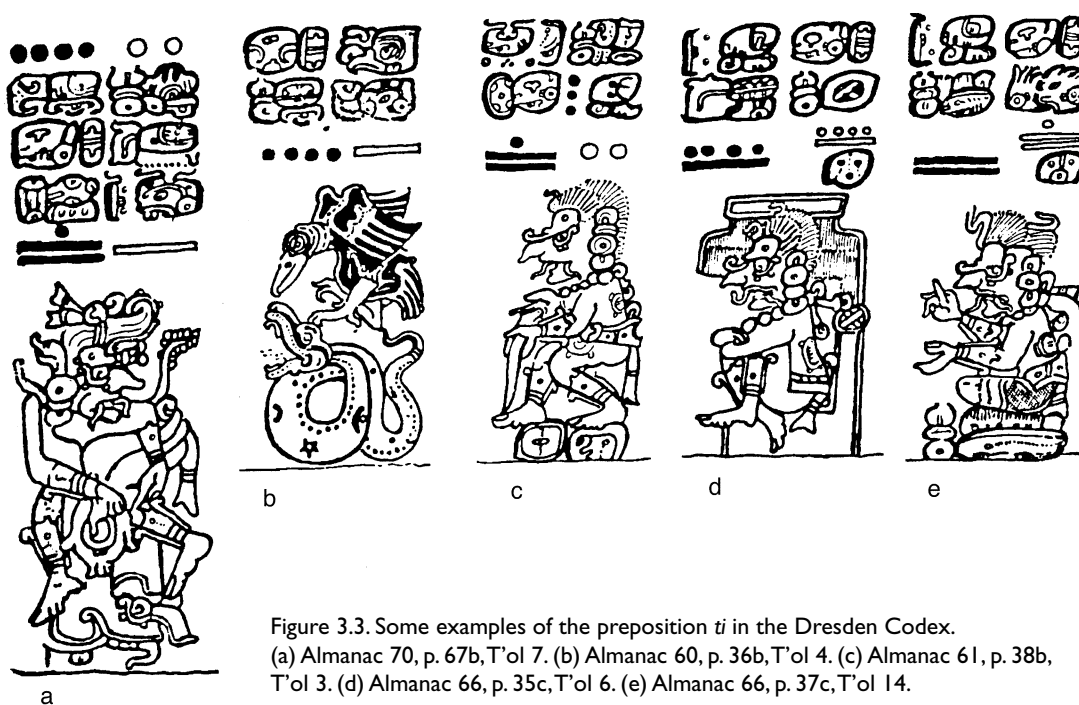


Figure 3.3. Some examples of the preposition *ti* in the Dresden Codex.

(a) Almanac 70, p. 67b, T'ol 7. (b) Almanac 60, p. 36b, T'ol 4. (c) Almanac 61, p. 38b, T'ol 3. (d) Almanac 66, p. 35c, T'ol 6. (e) Almanac 66, p. 37c, T'ol 14.

Consonantal Shifts

Because they are usually considered synchronically and diachronically more stable than vowel sounds, consonantal differences between languages have often been accorded greater weight in distinguishing between languages. This is usually the case for Mayan languages as well. Table 3.3 lists sound shifts that can help to distinguish the Yucatekan from the Ch'olan languages. Tzeltalan is included for comparison. Consonantal shifts from proto-Mayan have been included in the list only if they might call attention to possible differences between the Ch'olan and Yucatekan languages.

TABLE 3.3. Partial List of Correspondence Sets for Proto-Mayan, Yucatekan, Ch'olan, and Tzeltalan. Adapted from Stross (1994: 43–47) and Campbell (1984: 6)

PM	UK	CHL	TZE/TZO
*j	j or h	h	j
*k	k or ch	ch	ch
*k'	k' or ch'	ch'	ch'
*q	k	k	k
*q'	k'	k'	k'
*t	t or ch	t	t
*t'	t' or ch'	t'	t'
*ty	t or ch	t	t
*ty'	t'	ch'	ch'
*w	w	w	w/v

NOTE: Proto-Mayan *k/*k' > ch/ch' when preceding pM q/q' in a root in Yuk.
Proto-Mayan *t' > ch' before u, elsewhere remains t' in Yuk.

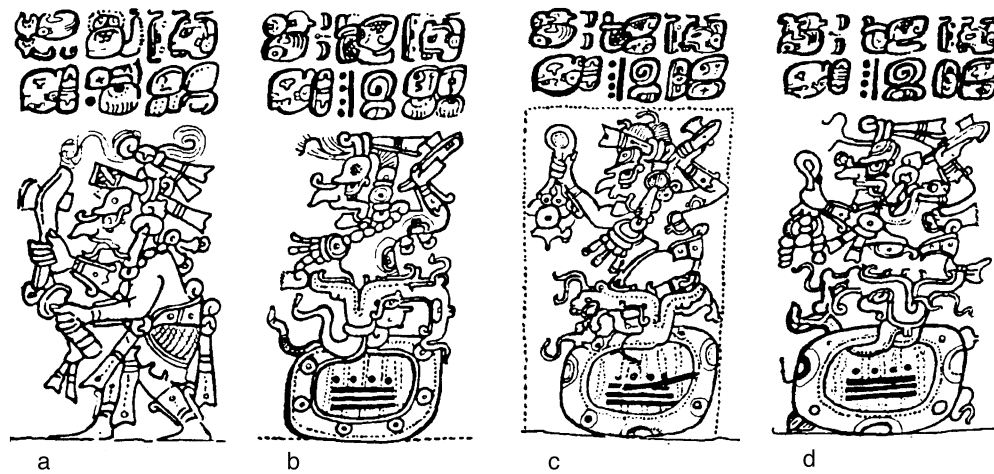


Figure 3.4. Forms of the verb *och* 'to enter'. (a) Almanac 59, p. 32b, T'ol 2. (b) Almanac 59, p. 33b, T'ol 4. (c) Almanac 59, p. 34b, T'ol 6. (d) Almanac 59, p. 35b, T'ol 8.

Och

Kaufman and Norman (1984: 127) reconstruct **ook* as the proto-Mayan word for 'enter'. Fox (1978: 137) gives it as **ó:k-i*. Since /k/ is the final consonant and is therefore not followed in the word by a /q/ in proto-Mayan, Yukatek preserves the original /k/ as expected. For the Tzeltalan and Ch'olan languages, Table 3.3 predicts that the original /k/ would change to /ch/.

These predictions are borne out by the dictionary sources. The Cordemex gives meanings related to 'enter' under entries such as *okol*, 'entrar' and *oka'an*, 'entrado; iniciado, ordenado' (Barrera Vásquez 1980: 595, 597). These meanings are not included under any entries for *och*. The Motul has the meaning 'entrar' for *ocol* (Martínez Hernández 1929: 705).

For Ch'ol, Josserand and Hopkins (1988b: NAH11IV,8) provide the entry *och* 'to go in, entrar'; and *och majklelti yebal ja'* 'sink' ('*sumirse, hundirse*'). Aulie and Aulie (1978: 89) give *ochel* as a transitive verb with the meaning 'entrar'. Morán (1935: 26) has the same entry, *ochel*, for Ch'olti with the same meaning. Wisdom (1950b: 552) has these entries among others: *och* 'entering, entrance'; *ochii* 'enter a thing or place'; and *ochem* 'entered'. Finally, the verb *och* occurs a number of times as an intransitive verb in the Acalan-Chontal document in various forms such as *ochi* with the meaning 'entrar' (Smailus 1975: 160).

In summary then, if the root *ok* occurs in what is likely a verbal position in the Dresden Codex with a contextually backed meaning related to 'enter', it is probably Yukatekan. If it is in the form *och* with the same meaning, it is likely a Ch'olan word. Figure 3.4 contains several examples where the latter seems to be the case.

In each of the examples in Figure 3.4b–d, the transcription of the first three glyph blocks is the same, *ochi tutun chak*, '[On this day] *Chak* entered his stone (*tun*)'. In Figure 3.4a, the meaning seems to be the same, but instead of *tutun* the second collocation seems to be *hutun* and the action in the accompanying illustration is not as obvious.

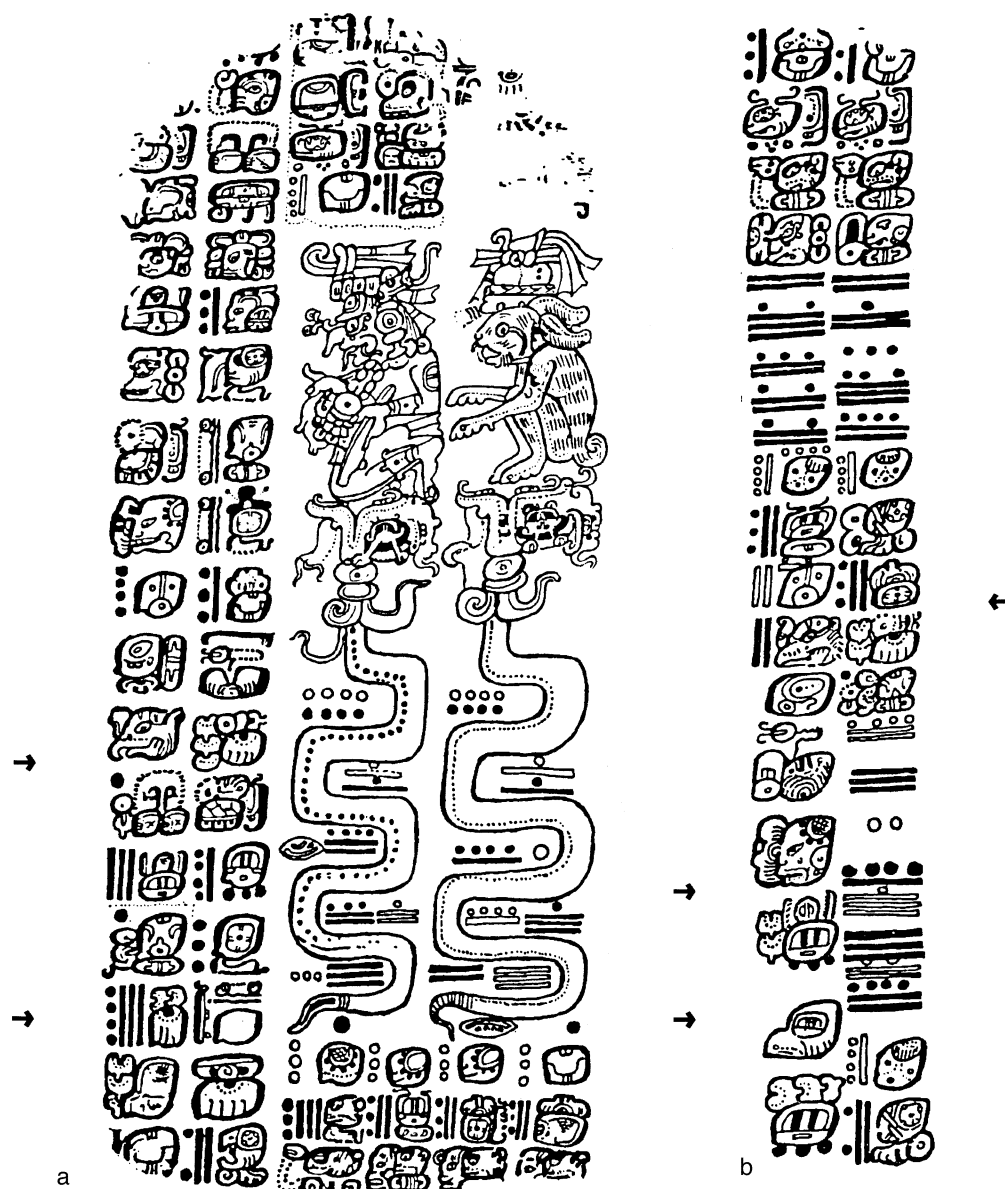


Figure 3.5. More examples of the verb *och* 'to enter'. (a) Page 61. (b) Page 70, Col. C–D.

Figure 3.5 contains several more examples. The text on Dresden page 61 (Figure 3.5a) is not nearly as clear, but seems to be using a form of *och* several times in the sense of 'to enter'. The glyph collocation at B12 reads *och ti ha* 'enter into the water'. Again at A16 the text reads *b'olon lajun och ha* and at A17-B18 *och ?? ta ha* both of which seem to refer to entering water. The two serpents on the right that are being entered do not have stone or jade markings as do the serpents in Figure 3.4b–d. Instead, their bodies are marked with the type of dots that often indicate drops of liquid.

On Dresden page 69, which is not pictured here, and page 70, there are several phrases combining *och* with baktuns, katuns, and other time periods (see Figure 3.5b),

but it is not completely clear that this implies the entering of these particular periods. Earlier in the text in Figure 3.5b is a somewhat clearer passage: *och ta ha' jun ? winik* 'one (first?) man entered into the water'.

It seems then that from these examples, the verb *och* is used in the Dresden Codex in the sense of 'to enter' and so this is a good indication that the language of these passages is Ch'olan.

Ut and uti

The shift of the consonant /t/ to /ch/ from proto-Mayan to Yucatekan created additional differences between it and the Ch'olan languages. The proto-Mayan word **ut* remains as **ut* in proto-Tzeltalan and **uht* in proto-Ch'olan (Kaufman and Norman 1984: 135). In each case the meaning is 'to finish', 'happen', or 'come to pass'. However, in Yucatek, the last consonant became /ch/ and the word became *uch* also meaning 'to happen' or 'come to pass'. The entry for Yucatek in the Cordemex is *uch* with the meaning '*días ha, mucho tiempo ha; suceder; acontecer; poder*' (Barrera Vásquez 1980: 896–97). In the Motul the following entries can be found: *uchul, uchi, uchuc*; '*acaecer, acontecer, suceder y hazerse alguna cosa*'; *Baix uchi tech ti be?* '*que ta sucedió en el camino*' (Martínez Hernández 1929: 898).

For Ch'ol, Aulie and Aulie (1978: 125) list *uht* as an intransitive verb under the entry *ujtel* with the meaning '*terminarse*'. Also for Ch'ol, Attinasi (1973: 328) has an entry for *u:luy/u:t* with the meaning of 'make, do, happen' and includes *u:t-i* as 'finished, happened'. The Acalan-Chontal document contains the word several times, always ending in *i*. The meaning listed for *uti* by Smailus (1975: 175) is '*occurir*' and '*ser hecho*'.¹⁹

Ut and *uti* appear several times in the Dresden Codex. Some of these are shown in Figure 3.6. While the meaning of some of these passages is still unclear, the occurrence of *uti* in them is not. Its usage in connection with dates as in these cases is also well known from the Classic inscriptions. Figure 3.6a can be transcribed as *hu chan uti*, which, partially translated, is '? sky came to pass (happened) on . . . [day]'. The use of *uti* in (b) seems to be similar although the transcription of the first glyph block is not certain.

It is noteworthy that in the following passages, *uht* and *iut* occur, but the individual signs are out of their usual order. Although similar transpositions occur at times in the monumental inscriptions, they would be even more understandable here if the scribe were writing unfamiliar words. Figure 3.6c, for example, contains almost exactly the same phrase as 3.6b, but instead of writing '*uh-ti*', the scribe records *ti-'uh*. It is even more obvious in Figure 3.6d, where what is most likely *iut* is written as *ti-'i-'u* and in 3.6e where a phrase practically identical to 3.6a appears as *hu-chan-na ti-'u* instead of *hu-chan-na 'u-ti*.²⁰

19. Note that Smailus's reference to a Yucatekan word *utan* in the Motul is surely not relevant. That word is likely formed from the dependent pronoun *u* and the preposition *tan* with the meaning of 'in the middle of' or 'its middle' and so by extension 'while'—Spanish '*mientras*'—as reflected in the Motul Dictionary example '*mientras se hace algo*' (Martínez Hernández 1930: 910).

20. [Added:] This whole argument concerning *ut*~*uht* versus *ti-u*~*ti-uh* has been questioned by a reviewer (anonymous to me). In part the reviewer states that "Figure 6 suggests that they may be misspellings of *ti u* 'in the lunar month'. . . . *Ut-i* makes no sense whatever in the eclipse table, where the two

In addition to the examples in Figure 3.6, forms of this word also occur in Almanac 71 (Lunar Tables) on pages 53b T'ol 5, 54a T'ol 4, 55a T'ol 5, 56a T'ol 3, 57a T'ol 2, and 58a T'ol 3.

Since the corresponding verb meaning 'to do, finish, happen' would be some form of *uch* in Yukatek but *uht* in Ch'olan, it would seem the presence of *ut* and *uti* in certain passages would strengthen the evidence that these particular passages might be at least partly

examples of it are followed by cumulative totals, not dates. The syntax does not agree with the syntax of *ut-i* on the monuments, where it normally occurs between a distance number and a calendar round, whereas in the eclipse table the word order is *ut-i*–cumulative total–tzolk'in date–distance number." Considering the possibility that others may have the same objections as this reviewer, a response clarifying my reasons may be in order.

First, a final choice as to the correct original interpretation of the *ti 'uh* and *ti 'u* occurrences will have to await a comprehensive and detailed translation and interpretation of the noncalendric glyphic text. Also, as stated in the body of this essay, the interpretation of the original and latest scribe may not have been the same.

Second, *'ti uh* translated as 'in/at/on the moon' indicates nothing regarding the language used since this phrase would be the same in both Ch'olan and Yukatekan.

Third, I do not agree at all with the conclusion that *ut-i* (*'u-ti-ya uhtiiy*) "makes no sense whatever" in the two examples shown in Figure 3.6a and 3.6b. The "cumulative total" is indeed the number of elapsed *k'in*, *winiik* (*winal*) *haab'* (*tun*) and *winiikhaab'* (*k'atun*) and not just numerical "totals." Otherwise the third level would be multiples of 400 and not of a 360-day *haab'*. They represent a distance in days, months, years, and scores of years from a particular starting point. Also, as Victoria and Harvey Bricker (1986: 55–56; 1992: 47–48, and elsewhere) have so brilliantly argued for other Dresden sections, the distance numbers lead into the next T'ols. They are not so much the ends of passages as rather lead-ins to the next, just as they usually are in the Classic period texts. The order is not "*ut-i*–cumulative total–tzolk'in date–distance number" but rather "distance number–*uhtiiy*–cumulative periods of time–tzolk'in." So *uhtiiy* in these passages is functioning precisely as it does often, although not exclusively, on the Classic period monuments. *Uhtiiy*, the verb 'happen, occur' plus adverbial enclitic 'ago, in the past', is used when the narrator is discursively referring back to a previous event, with the previous event as the referent of its absolutive pronoun subject (here "null") as in these two examples. In other passages, such as in Figure 3.6e, the narrator uses the verb *uht* without the adverbial enclitic referring to the upcoming total time period and day with them as the referent of its absolutive pronoun subject (also "null"). Furthermore, the enclitic 'ago, in the past' is *-iiy--ijiiy* in the Ch'olan languages, whereas the Yukatekan equivalent is *-eey--ejeey*, which further strengthens the overall argument for Ch'olan in the Eclipse (Lunar) Pages. This is especially relevant since it is only in Ch'olan and not even in Tzeltalan that this change from /e/ to /i/ has taken place.

Fourth, there is another enlightening example of this verb shown in Figure 3.6d that matches a form common in the Classic texts. In strict glyphic order, it is *ti-'i-'u*. But as elsewhere in the Dresden Codex and in Classic period texts, strict glyphic order is not always followed by the scribes. The next glyph block bolsters a reverse-order hypothesis. It begins with the 'woe-arm', perhaps a logogram for *LOB'*. The next two glyphs, *TAL* and *YAX*, occur together several times in the Eclipse pages (51b T'ol 2; 55a T'ol 4; 56a T'ol 2; 56b T'ol 5; 57b T'ol 2). The order is always *YAX TAL* instead of *TAL YAX* as here. The scribe reversed the order here without intending a different word; the intended reading is still *yaxtal*. Likewise, the intended reading order of the previous glyph block is *'i-'u-ti*. Although *ti' u* could mean 'at the edge of the moon' (with *'u* as *'uh*), the preposition *ti* is never written with a glottal elsewhere, that is, as *ti-'i*. Instead *iuht* means 'and then it happened' followed by *lob'(?)* *yaxtal*. The next sentence beginning with *ukab'jiiy* tells who oversaw the event that is depicted in the drawing below the text.

Finally, it is easy to comprehend how *'u-ti* could be reversed to become *ti-'u* and *ti-'uh* reversed to become *'uh-ti*, thereby making both *ti u(h)* 'in/on the moon' and *u(h)t* 'to happen' acceptable possibilities. However, it seems incomprehensible that *ti 'u(h)* could become *'u-ti*, *'i-'u-ti*, and *'u-ti-ya* thereby producing *uht*, *iuht*, and *uhtiiy* and accidentally replicating in appropriate contexts three of the most common forms and compounds involving the verb 'to happen' in the Classic period texts.

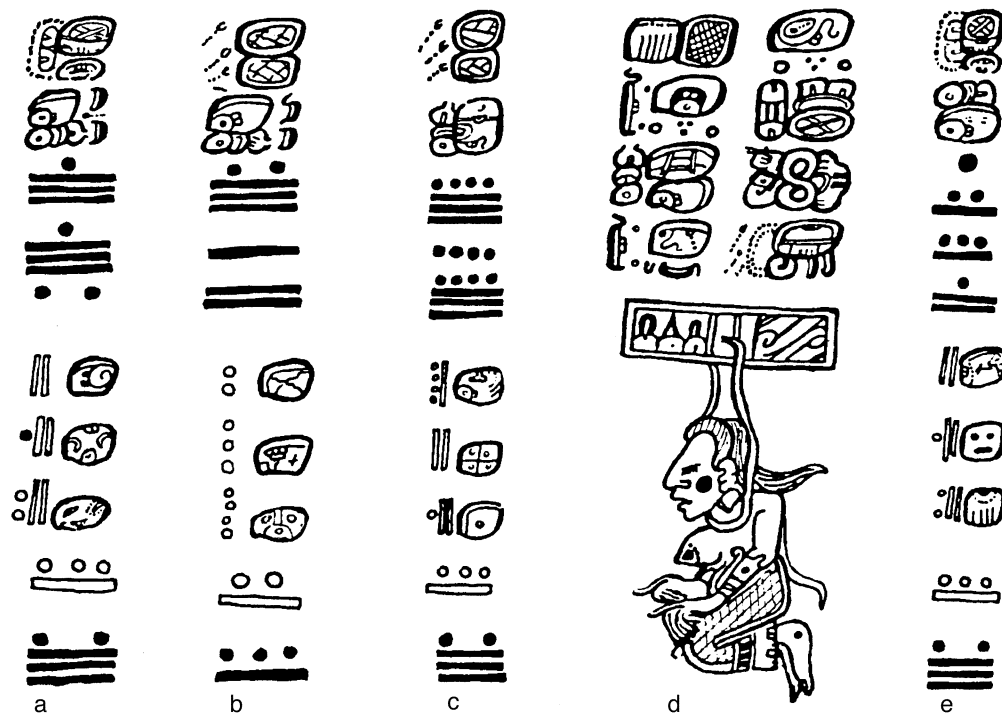


Figure 3.6. Some forms of the verb *ut* 'to happen'. (a) Almanac 71, p. 51b, E. (b) Almanac 71, p. 51b, F. (c) Almanac 71, p. 52b, F. (d) Almanac 71, p. 53b, C–D. (e) Almanac 71, p. 55b, G.

written in Ch'olan. The miswriting or transposition of the syllables could be additional evidence that the scribe was not acquainted with these forms of the word.

Verbal Inflection

YUKATEKAN FORMS: TRANSITIVE-COMPLETIVE

Since there is much confusion as to verb inflection in the Dresden Codex²¹ even among those who assume it to be written completely in Yukatek, some likely Yukatekan verb forms will be examined first. Table 3.4 summarizes transitive verb derivation and inflection in colonial and modern Yukatek.

In addition, it should be noted that in Yukatekan, just as in Ch'olan, the ergative pronoun precedes all transitive verbs. Since most of the Classic and Postclassic texts are written from the perspective of the third-person singular, this pronoun is most often *u* in both Ch'olan and Yukatekan. The ergative pronoun stands for, or is in agreement with, the

21. The content of the verbal inflection tables is based primarily on MacLeod (1987). Verification and adjustments have been made based on Bricker (1986), Kaufman and Norman [K&N](1984), Josserand and Hopkins [J&H](1988a, b), Knowles (1984), MacLeod (1984), Morán (1935), Smailus (1975), Robertson (1992), and Warkentin and Scott (1980). The orthography has been modified to match that of the Academy of Mayan Languages of Guatemala.

TABLE 3.4. Transitive Formation in Colonial and Modern Yukatek

Colonial Yukatek		Modern Yukatek
INCOMPLETIVE		
Root	-ik	-ik
Derived	(causative): -es: [final] -b'-es: -m-es: -s: [medial] (other)= -t: [< i.v. or n.] -kin-t: [< adj., pos. or noun] -kun-t: [<adj., pos. or noun] -Ø: [< some i.v.] -in-t: [< n.]	(causative): -es: [< i.v.] -b'es: [< adj.] -k'-es: [celer.] -s: -kin-s: -kun-s: (other)= -t: [< i.v. or n.] -kin-t: [< adj., pos. or n.] -kun-t: [< adj., pos. or n.] -Ø: [< some i.v.] -in-t: [< n.]
	-ik	-ik
COMPLETIVE		
Root	-aj	-aj
Derived	(derivational suffixes same as for incompleted above): -aj	(derivational suffixes same as for incompleted above): -aj

subject of the transitive verb. The pronoun standing for the object of transitive verbs in the third-person singular is null (-Ø) and so is invisible in the glyphic texts as well.

*Utek'aj (?)*²²

Figure 3.7 contains an Almanac that appears in the earlier pages of the Dresden Codex. The first three glyphs of T'ol 1 in this almanac can be transcribed as *utek'aj nah itzamna*, which in translation is '[On this day] *Itzamna* stepped into onto {paced off} the building'. The second T'ol of this almanac reads *utek'aj nah* [God Q] which is '[On this day] [God Q] stepped onto {paced off} the building'.²³

22. That this verb displays the equivalent of Yukatekan transitive-completive inflection is likely. However, if the *chak*-like second glyph in this collocation is really *te*, as Grube (1992) suggests, the stem itself is Ch'olan and not Yukatekan, or perhaps Yukatekan before the sound change from /ty/ to /ch/. The corresponding Yukatek root is *chek'*. Another alternative is to judge the sign to be syllabically bivalent, a much less favorable alternative and one that opens the the floodgates for positing bivalency wherever one's preconceived expectations are not met.

23. [Added:] Although not directly relevant to the matter at hand, I would translate this passage slightly differently today. Rather than indicating a good or bad day for entering a house or temple, it instead indicates which are the best or worst days for constructing, or beginning to construct, a building. *Itzam Naaj* and God Q are pacing off or measuring in paces the size of a building by putting one foot just ahead of the other while at the same time counting the number of paces on their fingers. "Pacing off" a building ('*medir a pies o pasos*') is one meaning given in the Cordemex Dictionary (Barrera Vásquez 1980: 88) for *chek'aj* and is the most appropriate here.

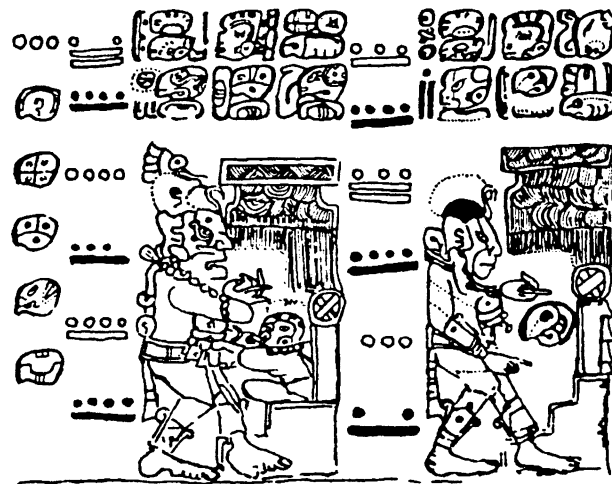


Figure 3.7. *Utek'aj nah* 'he/she stepped on {paced off} the building'. Almanac 27, p. 8c, T'ols 1 and 2.

Important for our purposes is the inflection on the verb and the structure of the sentence or phrase. The verb begins with the third-person singular ergative pronoun *u* and ends in *-aj*. This is precisely the form expected for the transitive completive verb in Yukatek. In addition to the verb form, the structure of the sentence itself supports a transitive interpretation with the direct object *nah* placed immediately after the verb and followed by the subject.²⁴

*Upak'aj*²⁵

Figure 3.8 contains another almanac from the Dresden Codex. Again in each of the first three sections or T'ols, the verb form is exactly that of the Yukatekan transitive-completive as shown in Table 3.4. While the last T'ol does not ostensibly include the *ja*-glyph used to help form the *aj*-ending, it is very doubtful that this indicates a change in either form or meaning.^{26/27} The first three glyph collocations in T'ol 1 can thus be transcribed and translated as *upak'aj tzen chak*, '[On this day] *Chak* planted food'. In T'ol 2, the sub-

24. Note that the following portion of this and many other texts in the almanacs have to do with the tidings and negative or positive connotations of the actions, Gods, or days. Since they are usually not relevant to the arguments being made here and elsewhere in this investigation, they will not be addressed.

25. [Added:] Because a specific request has been made by a reviewer to provide citations for the reading and interpretation of *'upak'aj* in the Dresden Codex, I will attempt to do so here despite note 10 above. As with all decipherments, the most important are those involving the underlying syllabic and logographic glyphs. The first glyph, T1, was likened to the Spanish letter "u" in the sixteenth century by Gaspar Antonio Chi and Diego de Landa (cf. G. Stuart 1988a: 25) although there have been ongoing debates during the last two centuries over which particular glyphs might be its equivalents. The second glyph was identified as *pa* by Knorozov (1967b: 88). The third glyph is documented as *k'a* and the fourth as *ha* (*ja* according to Grube, this volume) by Chi and de Landa (cf. G. Stuart 1988a: 25). Knorozov (1967b: 88) first read the verb in the Figure 3.8 contexts as *pa-k'a-ha* and translated it as 'to bring, carry'. Victoria Bricker (1986: 147) noted the appropriateness of an alternate Yukatekan meaning in this context and translated it instead as 'to plant, sow'.

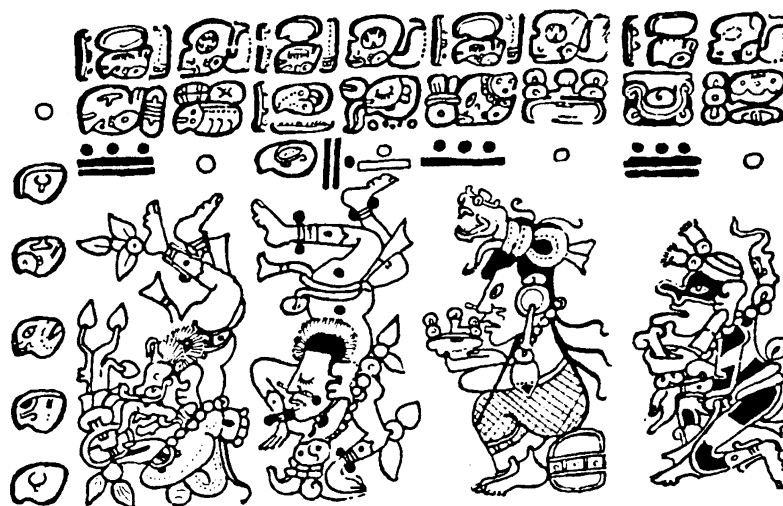


Figure 3.8. *Upak'aj tzen* 'she/he planted seeds'. Almanac 23, pp. 15b–16b, T'ols 1–4

ject is shared with the second phrase in the T'ol. *Upak'aj tzen umuk aj kimil*, '[On this day] He (God A) planted food; his tidings are death'. The first three glyphs of T'ol 3 can be read as *upak'aj tzen sak uh* (?). Translated this is '[On this day] She (Goddess I) planted food'. Finally, the last T'ol is *upak'[aj] tzen ek' chuwa yutzil*, '[On this day] Black *Chuwa* (God M) planted food; [the day's] tidings are good'. There appears to be good evidence then that the Yukatek transitive-completive aspect is represented in the Dresden Codex and that its form matches that expected for both colonial and modern Yukatek.

CH'OLAN VERB FORMS: INTRANSITIVE-COMPLETIVE

Table 3.5 shows the inflectional and derivational endings used to form the intransitive-completive in several Ch'olan languages.

Ochi

While there is some variation among the individual Ch'olan languages, the most common inflectional ending for root intransitive verbs in Ch'olan appears to be *-i*. Figure 3.4 shows four T'ols from Almanac 59 on pages 32b to 35b.

The verb in these passages has already been discussed in connection with the shift from proto-Mayan /k/ to Ch'olan /ch/. In at least three cases, the transcription is *ochi tu*

26. Dropping isolated prefixes and suffixes in one of a string of similar phrases is not rare in the Dresden and is in fact not uncommon in the Classic inscriptions especially when logograms are used.

27. [Added:] Instead of hypothesizing under-writing as the reason for the lack of the *ja* sign on the first collocation in the last T'ol in Almanac 23, the scribe could have very well written everything called for. If *tzen* is joined to *pak'* and the phrase is nominalized and possessed by God M, it could be considered a copulaless-stative clause and translated as 'it is the seed-planting of God M'. However, this sentence could then be interpreted as either Yukatekan or Ch'olan.

Table 3.5. Intransitive-Compleitive Formation in the Ch'olan Languages

Colonial Chontal	Modern Chontal	Ch'ol	Colonial Ch'olti'	Ch'orti'
COMPLETIVE				
Root [1st & 2nd p.] -Ø [3rd p.] -i	[1st & 2nd p.] -Ø [3rd p.] -i	-i(y)	[-V = root V] -Vy -ay [uncommon] -i ===== K&N: -Vi -ai	[-V = root V] -Vy -CC: -ay -an [uncommon] -i
Derived [K&N] i ===== [CVC + noun]: -Ø [CVC]: -ol -al [< der.trns.]: -y-aj	-i ===== [CVC + noun]: -Ø -aj [no inc.obj.]: -(a)y-aj -Vn -Vm [< der. trns.]: -aj -(a)y-aj	[foll. aux. or aux.+ ti - (to form tenses)]: -b-C: [< trn.]-CVC: [J&H, K&N] -i ===== [foll. aux. or aux. + ti] [< root trns.]: -ol -b'-al -on-el -ob-el -iy-el -äy-el [< caus.]: -aj -(a)y-aj [< others] [to CVCCV-]: -y-aj [others]: -om -Ø [inc/comp contrast in aux. verb only]	-i: -b-C-i: -a: -an: [K&N] -Ø ===== [< root trns.]: -ob-el -o-el [< root trns., caus. or other] -y-ah [< other]: -a[j]-el [detrans.]: -y-an	-CC-i: -i: [<disyll.]: -a: -an: [K&N] -Ø ===== [< root trns.]: -o [< positional]: -on -an [habitual]: -ma-y-an [< caus.]: -y-an -an [< aff. trns.]: -w-an [< fr. noun]: -i -V [< der. trn.]: -on [< intr.]: -y-an

tun chak, that is, '[On this day] *Chak* entered (went²⁸) into his *tun*'. The components of the sentence are the verb, a prepositional phrase (locative), and the subject. There is no object. This means the verb cannot be transitive. It could also hypothetically be a

28. Note that the verb 'enter' can be transitive in English. This is not the case for *och* in Ch'olan, which Kaufman and Norman (1984: 127) designate an intransitive verb. The sense is similar to 'come' or 'go' in English as in 'He went (entered) into the New Year with good resolutions'. 'Entrar' in Spanish is also intransitive and thus requires a preposition between it and what is entered. Although there seems to be evidence in Wisdom (1950b: 552) for the use of this verb as a transitive: "'neen oonche eyotot [in-ochi e y-otot] 'I enter the house'," this may be a more recent development.

Table 3.6. Transitive-Completive Formation in the Ch'olan Languages

Colonial Chontal	Modern Chontal	Ch'ol	Colonial Ch'olti	Ch'orti
COMPLETIVE Root				
<i>-i</i>	[3.per.sing. & pl.] <i>-e'</i>	[-V = root V] <i>-V</i> CaC: <i>-ä</i> [dep. on context]: <i>-Vy</i> <i>-äy</i>	CVC: [-V = root V] <i>-V</i> [uncommon] <i>-i</i> [other (few)]: [-V = root V] <i>-V</i> <i>-u</i>	CVC: [uncommon] <i>-i</i> CeC: [other (few)]: <i>-e</i> <i>-o</i> <i>-u</i>
Derived [causative]: <i>-es:</i> <i>-t-es</i> [-(C)V-]: <i>-l:</i> <i>-b:</i> <i>-t:</i> <i>-k:</i> <i>-i</i>	[causative]: <i>-(e)s:</i> <i>-t-es:</i> <i>-n-es:</i> <i>-m-es:</i> [-(C)-V-]: <i>-l:</i> <i>-b:</i> <i>-n:</i> <i>-p:</i> <i>-t:</i> <i>-k:</i> <i>-i</i>	[causative]: <i>-(e)s-a:</i> <i>-t-es-a:</i> <i>-m-es-a:</i> [caus. <posit.]: <i>-chok-o:</i> [-(C)V-]= <i>-l-a:</i> <i>-l-e:</i> <i>-l-u:</i> [< motion vbs.] <i>-b-a:</i> <i>-b-e:</i> [benef.] <i>-m-a:</i> <i>-p-a:</i> <i>-t-a:</i> [< i.v., pos., tv.] <i>-k'-i:</i> <i>-k'-u:</i> [caus.] <i>-ch'-i:</i> [caus.] <i>-a:</i> <i>-e:</i> <i>-i:</i> [usative] <i>-o:</i> <i>-u:</i> [<motion vbs.] <i>-y</i> <i>-Ø</i>	[n. or i.v. part.]: <i>-s:</i> <i>-p'-a-s:</i> [?] <i>-u</i> <i>-s:</i> <i>-t-es:</i> <i>-l-es:</i> <i>-p'-es:</i> CVC- <i>bil-es:</i> <i>-s-e:</i> [caus. < posit.]: <i>-chok-i:</i> <i>-b'-i:</i> <i>-b'-u:</i> [-(C)V-]: <i>-m-a:</i> <i>-t-a:</i> [< n. or i.v.] <i>-b'-e:</i> [benef.] <i>-l-e:</i> [< adj.] <i>-i:</i> [usative] <i>-Ø</i>	<i>-s:</i> [few] <i>-u</i> [causative]: <i>-s:</i> <i>-s-e:</i> <i>-ch'es:</i> <i>-l-es:</i> <i>-m-es:</i> <i>-p'es:</i> <i>-r-es:</i> <i>-t-es:</i> [caus. < posit.]: <i>-p'a:</i> <i>-p'u:</i> [other]: <i>-p'e:</i> [benef.] <i>-r-e:</i> [iter., dur.] <i>-r-o:</i> [iter., dur.] <i>-r-u:</i> [iter.,dur.] <i>-t-a:</i> [< i.v.] <i>-w-i:</i> [< noun (few)] <i>-Ø</i>

Yukatekan intransitive, but then one would expect the verb to be written *oki* since Yukatek did not change the proto-Mayan /k/ to /ch/.

CH'OLAN VERB FORMATION: TRANSITIVE-COMPLETIVE

Table 3.6 shows the derivational and inflectional suffixes used to form transitive-completive verbs in the Ch'olan languages. Note that although the suffix is actually a repetition

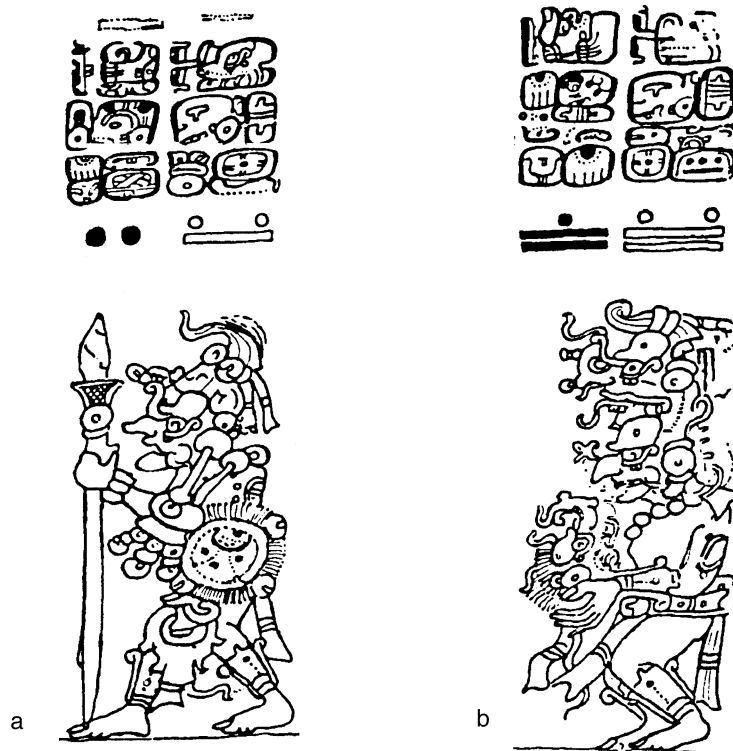


Figure 3.9. *Uch'ama(w) k'awil* 'he/she held God K' and *utzaka(w?) k'awil* 'he/she conjured God K'. (a) Almanac 69, p. 67a, T'ol 8. (b) Almanac 69, p. 65a, T'ol 3.

of the root vowel, the requirements of the hieroglyphic script have necessitated the addition of a final *wa* syllable, just as a final *ya* syllable was required for the *-i* of the Yukatekan passive and the Ch'olan intransitive examples just examined (cf. Wald 1994).

Uch'ama(w) and *utzaka(w)*.

There is surely one, and possibly two, examples of this Ch'olan verb form in the Dresden Codex. They are shown in Figure 3.9. The transcription of the first four glyphs of Figure 3.9a is *uch'ama(w) k'awil ik' na chak*. This can be translated as '[On this day] the black north *Chak* held *K'awil* (God K, sustenance God)'. This verb not only forms a common one in the Classic inscriptions but this actual text, *uch'ama(w) k'awil*, written in just this way, is also widely attested.

The example in Figure 3.9b very clearly contains a transitive-completive verb. The problem is that because of the damage to the top portion of the codex, the internal detail of the glyph is not complete. It is not clear whether the last glyph in the collocation is *ja*, *wa*, the fingers of the grasping hand, or something else. If one assumes that the fingers are not shown at all, the glyph at first seems to fit the general shape of T181 *ja* better than T130 *wa*. However, of the *ja* glyphs that occur in this same Almanac, just six (see Figure 3.13b) and eight T'ols later do not match the outline seen here. If the suffix is indeed the fingers of the hand and *wa*, the form is Ch'olan and the transcription would be *utzaka(w)*

Table 3.7. Passive Formation in the Ch'olan Languages

Colonial Chontal	Modern Chontal	Ch'ol	Colonial Ch'olti	Ch'orti
COMPLETIVE Root				
<i>-k</i> [funct. neg. inc.]: <i>-k</i> <i>-i</i> <i>-a</i> <i>-t-i</i>	<i>-k</i> <i>-k-in-t</i> <i>-i</i> <i>-i</i>	<i>CV-h</i> : <i>CV-s</i> : <i>CV-x</i> : <i>CV-'</i> : <i>CV-y</i> : <i>CV-ch</i> : <i>CV-ch'</i> : <i>-le(y)</i> CVC: [other] <i>-h-C</i> <i>-i(y)</i>	<i>CVC</i> : <i>-h-C-a</i> <i>CVC</i> : <i>-tz'-a</i> <i>CVC</i> : <i>-k'a</i> <i>CVC-V</i> : <i>-n-a</i> [?] <i>-Ø</i>	<i>-h-C-a</i> <i>-tz'-a</i> <i>-Ø</i>
Derived CVC-VI: [part.] <i>-k</i> <i>-k-a</i> CVC-(C)-V: CVC-(C)-V-a-n: CVC-(C)-V-i-n: <i>-t-i</i>	<i>-es-an</i> : [caus.] <i>-k</i> CVC-(C): CVC-(C)-i-n: <i>-t-i</i>	<i>-V:-nt</i> <i>-C:-t</i> <i>-i(y)</i> <i>-i(y)</i>	<i>-n-a</i>	<i>-n-a</i> CVC-CV-n: [imp./fut. stem; not w/caus. in -s] <i>-tz'-a</i> [< vb. nouns & few others]: <i>-w-a</i>

k'awil ha'al ok chak. If the final glyph is instead **ja**, the word is probably Yukatekan and the verb form is *utzakaj*. In either case, the translation would remain the same, '[On this day] the rain-hatchet-bladed²⁹ *Chak* conjured *K'awil*'. Just in case there is any doubt as to the meaning, the illustration shows the head of *K'awil* materializing in his hands.

CH'OLAN VERB FORMATION: PASSIVE

Table 3.7 shows the derivational and inflectional suffixes used to form the passive voice in the completive aspect for several Ch'olan languages. First, it should be noted that although many modern linguists do not add a *j* to the *-a* ending evidenced in Ch'olti and Ch'orti, the Maya scribes used a *j* as part of their *-aj* passive-completive suffix. The *-aj* thematic suffix is used for all of the passive verbs in the Dresden Codex.³⁰

29. One of the main entries in the Motul and Cordemex for *ok* is "*cabo de hacha*." Although *ok* can also mean foot, the hatchet that is almost always in *Chak*'s hand (although not in this illustration) makes this translation just as likely.

30. [Added:] An infix *-h-* is present in the Ch'ol, Ch'olti', and Ch'orti' passive forms. While this *-h-* can be reconstructed for the Classic period as well, it seems that the scribes never actually wrote or indicated the presence of this *-h-* in the passive forms. Though it is usual today to include this *-h-* in the transcription of the passive, I did not when this paper was first written and have not added it for the current version. The intent is simply to preserve as much as possible the original form of this essay and not to

Just as in the Classic inscriptions, verbs with passive inflection far outnumber any other verb forms. But what is unexpected here is that the Ch'olan passive-completive outnumbers any other verb form in the Dresden Codex.³¹ In fact, there are too many examples to examine individually here. Instead, several of them are discussed in order to demonstrate the veracity of the claims that have been made. The rest are simply included in a list in order to provide a complete accounting of this passive form in the Dresden Codex.

A major goal will be to show that these constructions are indeed passive, not only in inflection, but in actual sentence structure and meaning. This is important because the similarity of this form with the Yukatekan transitive-completive has been misleading in the past. One might be tempted to attribute the lack of the required *u* pronoun to “scribal illiteracy,” despite the apparent contradictory connotation of those two terms. While there are, to be sure, the scribal equivalent of “typographical errors” in the Dresden Codex, to have miswritten or forgotten pronominal prefixes on almost all of the dozens of verbs ending in *-aj* could hardly be written off as an oversight.

*Chukaj*³²

Figure 3.10 shows various passages from the Dresden that contain verbs written in the Ch'olan passive form ending in thematic *-aj*. Figure 3.10a provides an example of one of the most well-known verbs from the Classic inscriptions. The transcription is *chukaj jun ajaw umuk yatan* (or *yatal*). Translated, this is ‘[On this day] One *Ajaw* was captured, his

imply that the infixed *-h-* is not reconstructible. The reconstructible form was nevertheless even then implied by the entries shown in Table 3.7 for the three relevant Ch'olan languages. Its absence in the transcription indicated only that the *-h-* was not overtly represented in the script in these circumstances.

In order to avoid a misunderstanding voiced by a reviewer, it should be noted that I was by no means the first to identify these verb forms as directly reflecting a Ch'olan passive and *-aj* as being a thematic suffix used in conjunction with an infixed *-h-* in its construction. Kaufman and Norman (1984: 108–9) reconstruct an infixed *-h-* as an indicator of the passive for Ch'olti' and Ch'orti' and for most Ch'ol passives as well. While they analyze the suffixed *-aj* as an intransitivizing suffix in Ch'ol, they conclude that it is a thematic suffix in Ch'olti' and Ch'orti'. Although the final *-j* is often no longer pronounced in Eastern Ch'olan, they note that it is still present in the incomplete form in Ch'olti' according to Morán (1935a: 14, 16). MacLeod (1984: 254) in the same volume equates glyphic *chu-ka-ja* with the “Ch'olan passive construction . . . *chu(h)k-a*”. In my Master's thesis (Wald 1994b: 13, 159), I follow their lead in equating the Classic period explicit *-ah* (*-aj*) passive form with those of Eastern Ch'olan which also have an infixed *-h-*. I did so as well here and in the first draft of this paper in 1994, both of which include the Ch'olti' and Ch'orti' forms with infixed *-h-* (cf. Table 3.7). Alfonso Lacadena (this volume) discusses in detail the nature of the Classic period passive forms and argues convincingly for the appropriateness of transcribing the reconstructed infixed *-h-* even when it is not explicitly indicated in the hieroglyphic script.

31. Note that there is another type of sentence structure in the Dresden Codex which rivals the Ch'olan passive in number. It is the possessed noun with an understood but unstated copula. However, that is not really a “verb” form but rather an alternative sentence structure and as such stands somewhat outside the set being referred to here, that is, verbal constructions.

32. [Added:] As in note 25, a specific request for citations concerning *chukaj* (*chuhkaj*) has been made. Cyrus Thomas (1893: 260) identified Knorozov's #287 version of T601 as *ch*. In 1955, Knorozov (1967b: 99) equated the versions and assigned them the value *chu*. The next syllable was included in Chi and de Landa's list as *ka* (cf. G. Stuart 1988a: 25). The last glyph *ha* (*ja*), as has already been noted, also comes from Chi and de Landa. Knorozov (1967b: 99) deciphered the word as *chukaj* ‘to seize’ in the Dresden and Madrid Codices, but interpreted it as an active Yukatekan rather than a passive Ch'olan form. MacLeod (1984: 254) identified it as a Ch'olan passive.



Figure 3.10. *Chukaj* 'he/she/it was captured' and *ch'akaj* 'he/she/it was cut off'. (a) Almanac 7, p. 3a, T'ol 5. (b) Almanac 55, p. 37a, T'ol 4. (c) Almanac 63, p. 44b, T'ol 1.

tidings are his offering (payment)'. Only the first part of this text concerns us here. There are only two glyph collocations in the sentence or phrase that form the first part of the text. There is little possibility of an object here. It cannot be transitive-completive since there is no object written and no indication that one is implied. Since there is only one argument, the verb must at least be intransitive. Besides the *-aj* verbal ending, formed by the glyphic syllables *ka* and *ja*, the illustration itself implies that the person (and the iguana as well) had something done to him. The most straightforward conclusion is that *Jun Ajaw* is the subject (and so the patient) of the passive verb. Finally, the suffix is the Ch'olan thematic suffix *-aj* that accompanies the passive, evidenced not only in a colonial and a modern Ch'olan language but also in wide usage throughout the time of the Classic period inscriptions.

The same verb with a similar illustration can be seen in Figure 3.10b. Again the transcription and translation of the first phrase are similar: *chukaj chak*, '[On this day] *Chak* was captured'. All the arguments given for the previous passage hold for this one as well.

Ch'akaj

Figure 3.10c is a T'ol from Almanac 63. The first two glyphs in its text are the same as those of the following three in the same almanac. The verb can be transcribed as *ch'akaj* and in each case has the same subject, the so-called Mars beast. The main meanings of the verb are 'to cut off, behead, or destroy'. As a transitive verb, it can be used in the passive voice, which is evidently the case here since there is only one argument for the verb, there is no dependent ergative pronoun, and it ends in thematic *-aj*.³³ Using the syllable *ka*

33. Whether the verb could be used here in the sense of 'to cross' or 'pass by' as suggested by Orejel (1990: 6) would depend partly upon whether the verb is transitive in that meaning. Also, since the



Figure 3.11. *Tz'apaj* 'it was set in the ground'. Almanac 77, p. 26c.

following the logogram **CHAK** to provide for the *-a-* of the suffix with the *-j* coming from the final **ja** syllable is a common scribal technique in the Classic inscriptions as well as in the codices.

Tz'apaj

Figure 3.11 shows one of a set of four passages from the New Year's Pages on pages 25–28. The section from page 26c illustrated here is similar to the one that precedes it and the two that follow. Most important for our purposes, they all use the same verb and verb form. It is a verb that is used often in the Classic period and is in the same context here, that of 'setting something into place' or 'into the ground'. The text can be transcribed as *tz'apaj yaxamte' noj(ol) yax waj hab'il k'awilnal*. The translation might be something like 'The ceiba tree was set up in the south; green (fresh) bread year, the place of *K'awil* (God K, Sustenance)'.

Important here is that the only argument of the introductory verb *tz'apaj* is *yaxamte'*. Neither *K'awil* in this section nor *Chak*, *Kimi*, or *Itzamna* in the others are subjects or objects. They belong syntactically instead to the second or third clauses in the text. The absence of the *u* from *tz'apaj* only verifies what the sentence structure has already indicated. In each case, the form is that of a Ch'olan passive, the same form that is used so often in the Classic inscriptions.

subject (patient) in these passages is the "Mars beast," it would have to be the beast that is crossed or passed by and not some other object. Otherwise, Orejel's other proposed meanings of 'cut off, behead, or destroy' would be a better fit.

34. [Added:] Of course, the tentative suggestion for the reading of the open-hand glyph as *bel* has been superseded. David Stuart's (1996: 156–57) reading of *k'al* seems to be correct in most cases although *k'ab'* is likely correct in a few. Also, while *k'al* does mean 'to fasten, close, enclose' especially in Yukatek, it is not given the meaning of 'to tie' in the Cordemex (Barrera Vásquez 1980: 367–70) and is actually contrasted with 'tie' (*k'ax*) in Hofling's and Tesucún's (1997: 380–81) Itza Maya dictionary. In Ch'orti' its basic meaning as a verb is 'to hold, keep' (Wisdom 1950b: 500). It is perhaps this meaning that is intended in the Venus Pages.

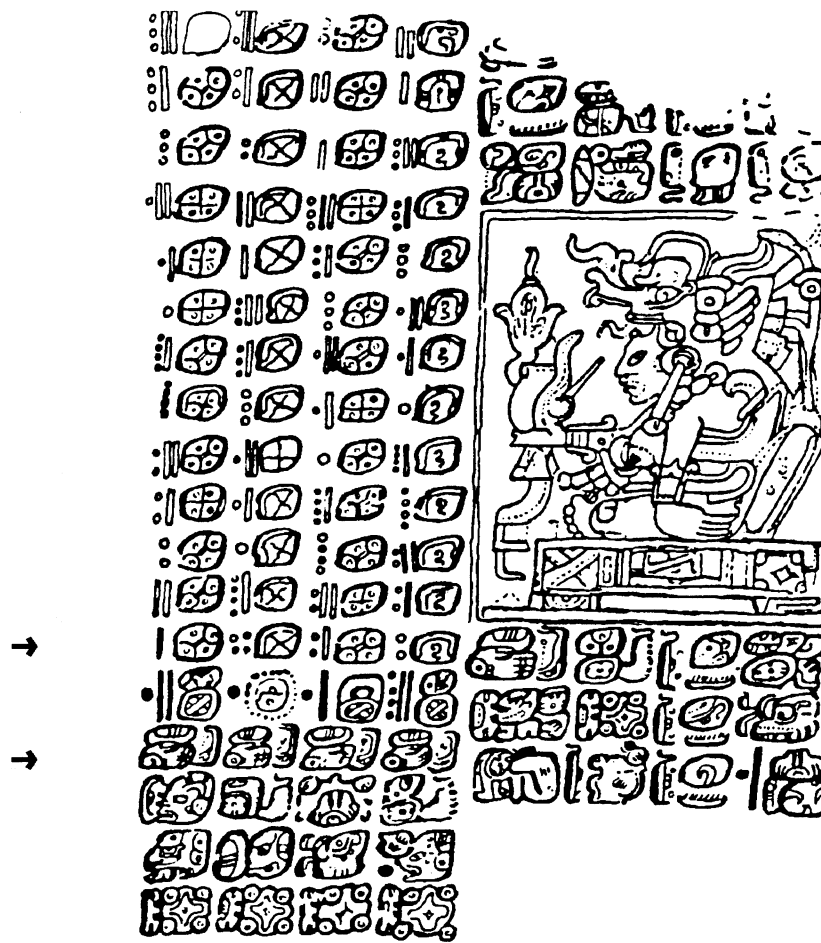


Figure 3.12. A portion of the Venus Calendar from page 49, {*k'alaj* 'it was held/tied'}.

Jelaj {*k'alaj*}³⁴

Figure 3.12 shows a portion of one of the Venus Pages. The verb form *jelaj* {*k'alaj*} appears five times in this section of page 49 of the Dresden Codex. In all, it appears 26 times in the Venus Pages. In only four of these instances is the glyph *ja* missing, but since the context is similar to all of the other occurrences and almost identical to 16 of them, even the four on page 48 are probably meant to be read as if they have the suffix *-aj* as well.

Having argued for the reading *jel* for the Mirror-in-Hand glyph elsewhere (Wald 1994: 129ff), I will only mention here that it means 'to change' in a wide variety of different contexts, including that of 'changing directions'. (As a verb, *k'al*, the widely accepted current decipherment proposed by David Stuart, means 'hold' in Ch'orti' and 'fasten' or 'enclose' in Yukatek as mentioned in note 34. In this newer reading, Venus or the Venus God would be 'held' or 'fastened' in the direction indicated.) That interpretation is bolstered here by the next collocation, one of the four directions. It is followed by a directional collocation in every case but one (on page 24, A4–B4), and in it the directional glyph precedes the verb.

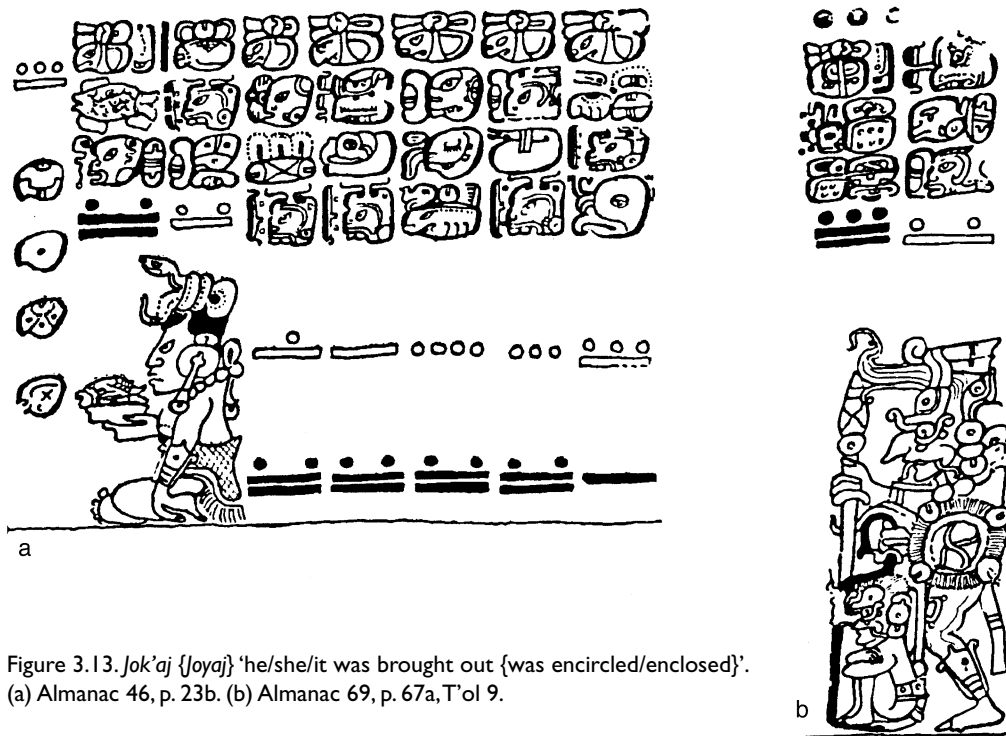


Figure 3.13. *jok'aj* {joyaj} 'he/she/it was brought out {was encircled/enclosed}'.
 (a) Almanac 46, p. 23b. (b) Almanac 69, p. 67a, T'ol 9.

Caution must be taken here against interpreting the verb *jelaj* {*k'alaj*} in an active sense. There is no *u* pronoun prefix on any of its 26 occurrences. The subject is in each case a particular aspect of Venus. It is Venus that is being changed (held or fastened), that is, undergoing a change in direction (being held in a particular direction). The first four glyphs below the Venus God seated on the skyband throne may be read *jelaj* {*k'alaj*} *lak'in chak xiwitel chak ek*, 'The big star, *Chak Xiwitel*, was changed to {held in} the east'.

Jok'aj {joyaj}³⁵

Figure 3.13 contains two examples of this verb from Almanac 46 and Almanac 69. This verb in Figure 3.13a is also well-known from Classic period inscriptions as *jok'aj* 'to be brought out, manifested' (or as *joyaj* 'to encircle, enclose'). The text in T'ol 1 can be transcribed as follows: *jok'aj* {joyaj} *ho pawahtun(?) chay usih* [Goddess I] *nikilil (ajawilil ?)*. Translated it becomes '[On this day] Five *Pawahtun(?)* was brought out {encircled/enclosed}; fish was the gift of Goddess I; ? [good tidings]'.

The five T'ols do not include the *ja* syllable at the end. It may be that they are still meant to be read with it since the first T'ol with the illustration seems to be setting up the pattern

35. David Stuart (1996) reads T684 (Toothache) glyph as *joy* rather than *jok'*, arguing in part from the occurrence of *jo-LOGOGRAM-ye-la* on Yaxchilan Lintel 25, which appears to be a better choice. In Ch'orti' *joy* as a transitive verb means 'make fitting, make proper' (Wisdom 1950b: 468). But perhaps more relevant here are the related meanings in Chontal 'go around, circle, turn' (Knowles 1984: 424) and Colonial Tzotzil 'cut off one's escape, encircle, enclose, surround' (Laughlin and Haviland 1988: 214). In the scene pictured in Figure 3.13b, *K'awiil* certainly seems to be encircled or enclosed.

for the following T'ols. Goddess I is not repeated in later T'ols either, but she is surely the one whose gift is being presented in each case. An alternative is that only the first T'ol contains the passive form of the verb and the rest represent a nominalized form used in a copulaless-stative construction, for example, 'brought out {encircled} was k'awil . . . '.

Jok'aj {joyaj} also appears in T'ol 9 of Almanac 69 as shown in Figure 3.13b. In this case, it is *K'awil* who is brought out (encircled) as both the text, *jok'aj {joyaj} k'awil*, indicates and the illustration so well depicts. The problem with this particular almanac for the purposes of the argument concerning the thematic passive ending in *-aj* is that the second row of text in each T'ol follows the same pattern no matter what the verb or verb form is. The pattern is static whether the verb has an active or a passive form. It presents a title and the identifying name of the primary God in each illustration. The argument for the passive verb from structure cannot be used in this case for that reason. Although it and other verbs in this almanac are formed with the passive in *-aj*, still others are transitive-completive and end in repetition of the root vowel (indicated in part by the glyphic suffix *wa*).

OTHER EXAMPLES

More verbs in the passive voice exhibiting Ch'olan passive inflection can be found in Almanac 8 on pages 4a to 10a; Almanac 14 on pages 4b to 5b; Almanac 20 on pages 10b to 11b; Almanac 21 on page 12b; the Eclipse (Lunar) Pages (e.g., 52b) and Serpent Numbers pages (e.g., pages 61, 69, and 72b). There are also other possible examples of passive verbs suffixed by *-aj*, but since their meaning is not yet known it is possible that some of them are positional verbs. Positionals will not be discussed in this investigation since both Yukatekan and Ch'olan can be shown historically to have likely taken a *-laj* suffix, although most of the colonial and modern Ch'olan languages today take *-wan* (see Kaufman and Norman 1984: 106–7).

Review and Topics for Further Study

The main goal of this investigation was to bring evidence from three different linguistic phenomena to bear upon the question of the language in which the Dresden Codex was written. Starting with the assumption that it was written in Yukatek, my intention was to see if any phonetic evidence exists for the presence of Ch'olan vowel shifts or the absence of any Yukatekan vowel shifts in the Dresden Codex's vocabulary. Next, a search was undertaken for any phonetic evidence of Ch'olan consonantal shifts or absence of known Yukatekan consonantal shifts from proto-Mayan. Finally, the verbal morphology of the codex was examined for the presence of forms and syntax that could be accounted for within the Ch'olan languages but not within Yukatekan. In all three areas, substantial evidence was found for the presence of Ch'olan in the Dresden Codex. In fact, the evidence seems so overwhelming that a strictly Yukatekan language hypothesis leaves too many phonetic, lexographic, grammatical, and syntactical mysteries unanswered, rendering it untenable. Although a complete study was not undertaken in this essay, a brief look at some Yukatekan verb forms provided a reminder that an exclusively Ch'olan hypothesis would be untenable as well.

The question prompted by the evidence gathered at this stage of the investigation concerns the nature of the relationship between the two languages within the text of the codex. This question is, of course, too broad to answer with any thoroughness at this time. Instead, a few observations and comments can be made with the expectation that the leads uncovered and further questions raised by them will be examined in more detail at another time.

Perhaps one of the most important tasks to perform next is to determine whether there is any confluence of the three types of evidence that have been gathered. In other words, are the Ch'olan-exclusive vowel shifts or retentions present in one section of the codex and consonantal shifts and retentions in another? Are either of these found in the same sections as Ch'olan verb forms? A related and even more important issue is whether the evidence of Ch'olan is distributed rather evenly or haphazardly throughout the codex or is it confined to specific, well-defined sections? If confined to specific sections or almanacs, is there any admixture of purely Yukatekan shifts, retentions or verbal morphology in the same sections?³⁶

Among the sections of the Dresden Codex, the Lunar or Eclipse Tables (Almanac 71 pages 51–58) include a variety of Ch'olan phonological and verbal forms. It is the only section in which forms of the Ch'olan verb *ut* occur in the codex. While not explicitly a part of this study, it is important to note the presence of another word that, except for one other example, occurs only in this section, *ukaji* {*ukab'i*}. Meaning 'by' or literally 'he did it' ['govern, oversee'], it is very common in the Classic period inscriptions. It is not specifically Ch'olan or Yukatekan since related words are present in both with related meanings.³⁷ However, its use in this particular context with passive sentence structures is difficult to document in any of the colonial and modern Yukatekan or Ch'olan languages. Both of these words and the way they are used would tend to tie it closely to the Classic Maya inscriptions. It also contains at least one verb with Ch'olan passive inflection, *pataj*, 'was made or created'. However, *ta* is not in evidence, but neither is *ti* (other than in a miswritten *uti*).

The Serpent Numbers, along with the related *Chak* Almanacs 69 and 70 on pages 61 to 73, stand out as a section that illustrates examples of most of the Ch'olan phonological and verbal forms mentioned. Although *ut* and *uti* are absent, *ta* is used throughout as

36. Note that other factors such as actual long-count dates and distance numbers, artistic style, identities and names of deities, iconography, and other factors might also be relevant for such a determination. However, these factors are beyond the scope of this essay and so have not been specifically considered at this time except perhaps tangentially. For the most part, only the items that formed the basis for this investigation have been expressly considered.

37. [Added:] It has since been convincingly argued by Stephen Houston and David Stuart (personal communication) that the Tzotzil equivalent of this word is really *uchab'i*. It is a defective verb that is documented only in the Tzeltalan languages and has the meaning of 'to oversee' or 'to govern' in Colonial Tzotzil (Laughlin and Haviland 1988: 184–85). The forms that occur on the Lunar pages also provide strong evidence for Ch'olan as the language. As proposed by MacLeod (this volume), the *-ij~-iij* suffix is attested as the "stative aspect" in Tzotzil by Haviland (1988: 92) and as the "perfect" by MacLeod. I (Wald 2000c and this volume) have identified *-iij~-ijiiy* as an adverbial enclitic attached to verbs in Acalan Chontal. Based on the usual reading of the logogram and the presence of *kab'* for 'earth' in the Ch'olan languages, I would transcribe it as *ukab'jiy*. The presence of this verb only in Tzeltalan sources strengthens the argument for Ch'olan over Yukatekan as the language of the Eclipse (Lunar) pages.

the preposition of choice with only a few exceptions. *Bih* is used instead of the Yucatekan *beh*. *Och* occurs with the meaning ‘enter’. It is the only section with Ch’olan transitive-completive verb forms. It contains several examples of Ch’olan passive forms as well. Several of the phrases, such as *uch’ama(w) k’awil utzaka(w) k’awil*, and *jok’aj {joyaj} k’awil* could and did appear on Classic period inscriptions. This occurrence and the late use of *ta* as the common preposition almost exclusively only west of the Usumacinta, especially around Palenque and Tortuguero, suggest a preliminary guess that might place the source for this text in a book written originally in that area.

Based on verbal inflection, the Venus Tables (Almanac 76 on pages 24 and 46 to 50) were arguably written in Ch’olan despite the addition of Nahuatl God names. The New Year’s pages, Almanac 77 on pages 25–28, are Ch’olan as well. Also, based on the criteria used in this study, other sections or almanacs that were likely written in Ch’olan are Almanacs 7 on page 3a, 8 on pages 4a–10a, 9 on pages 10a–12a, 14 on pages 4b–5b, 19 on page 10b, 20 on pages 10b–11b, 21 on page 12b, 46 on page 23b, 55 on pages 31a–39a, 56 on pages 40a–41a, 59 on pages 31b–35b, 61 on pages 38b–41b, 63 on pages 44b–45b, and 67 on pages 40c–41c.

Besides those almanacs for which the evidence is quite strong, there are others that, although likely written in Ch’olan, do not provide as much evidence or the evidence is not as straightforward. These include Almanacs 10 on page 12a, 11 on page 13a, 31 on page 13c, 35 on pages 18a–19a, 45 on page 22b, 57 on pages 42a–44a, and 66 on pages 33c–39c.

The number of almanacs that provide strong evidence for Yucatekan rather than Ch’olan are quite limited. They are Almanac 23 on pages 15b–16b and Almanac 27 on page 8c. Another Almanac that might also include some evidence distinguishing Yucatek from Ch’olan is 13 on page 15a although it is somewhat eroded.³⁸

There is a large set of passages from the Dresden Codex that, based on the criteria discussed here, could be written in either Ch’olan or Yucatek. These include the following: Almanacs 3 on page 2a, 4 on page 2b, 5 on page 2c, 6 on page 2d, 15 on pages 5b–6b, 16 on pages 6b–7b, 17 on page 8b, 18 on page 9b, 24 on pages 4c–5c, 26 on pages 6c–7c, 29 on pages 10c–11c, 30 on page 12c, 39 on pages 16b–17b, 40 on pages 17b–18b, 41 on page 19b, 42 on pages 19b–20b, 44 on page 21b, 47 on pages 16c–17c, 48 on pages 17c–18c, 49 on pages 18c–19c, 50 on pages 19c–20c, 51 on pages 21c–22c, 52 on pages 22c–23c, 58 on pages 29b–30b, 58a on pages 30b–31b, 64 on pages 29c–30c, 65 on pages 30c–33c, 68 on pages 42c–45c, and the K’atun Prophecies on page 60.

For the remaining almanacs, it has not been possible to determine in which language they were written or even to conclude that they could have been written in either. In the case of a few of these, the difficulty lies in the decipherment or the interpretation of the critical words or passages. However, most of them cannot be determined because deterioration or erosion of the codex pages has made the most critical portion of the text

38. [Added:] Almanac 36 on page 19a–21a contains evidence that it was written in Yucatekan and should have been included as such. This is based not on the content of the actual T’ols themselves but rather on the appearance of the number 11 written syllabically at the beginning of the text. It is [bu]-lu-ku, as noted by Knorozov (1967b: 77). This could not be Ch’olan because of the /k/ to /ch/ sound change, which took place in Greater Tzeltalan.

virtually illegible for a decision to be made. Many of these are located in the upper registers of the pages where most of the deterioration has taken place.

It must be emphasized that the results presented in this study are preliminary. More work needs to be done and these findings need to be reviewed again for accuracy. However, it seems that at least this much is already clear. The evidence shows that Yucatek was not the only language used to write the Dresden Codex. The ramifications of this conclusion for Postclassic Maya history are very interesting, but speculation concerning them will have to wait for another time.

PART II. PHONOLOGY

FOUR

The Orthographic Distinction between Velar and Glottal Spirants in Maya Hieroglyphic Writing

NIKOLAI GRUBE

University of Texas at Austin

Many Mayan languages distinguish between velar and glottal spirants, or they had such a distinction at some time in the past. The anonymous author of the sixteenth-century Motul dictionary for the Yucatec language recognized a distinction between words “*que comienzan en H rezia*” and “*de los que comienzan en H simple, que hiere muy poco, y aun se pierde en muchos, quando se les anteponen pronombres*” (Martínez Hernández 1929: 358, 418). The author of the dictionary overlooked the fact that the distinction between these two spirants was also made in stem-medial and in word-final positions. In word-final position, the velar was written as *h*, while the glottal was not represented orthographically (Ola Oribe and Bricker 2000: 304). The distinction between velar and glottal spirants can be traced in colonial and postcolonial Yucatec documents until the second half of the eighteenth century. It is only now that the phonological distinction between the two spirants is not expressed in modern Yucatec Mayan any more. Today, the reflexes of both are pronounced as a laryngeal *h* (Ola Oribe and Bricker 2000: 305).

The phonemic contrast between velar and glottal spirants also existed in sixteenth-century Tzotzil and was recorded by the author of the Tzotzil dictionary of Santo Domingo Zinacantán (Laughlin and Haviland 1988). In the *Vocabulario de la lengua tzeldal según el orden de Copanabastla* written by Fray Domingo de Ara, the same distinction is recorded for Tzeltal and is orthographically distinguished with the grapheme combination *gh* for the velar spirant and *h* for the glottal spirant (Humberto Ruz 1986). Today, this distinction has disappeared completely in Tzotzil and survives in Tzeltal only in the dialects of Bachajon and Petalcingo (Robles Uribe 1966: 16; Slocum and Gerdel 1965; Kaufman 1972: 22–23, 33).

In the eastern branch of Mayan languages most languages have lost the distinction between the glottal and velar spirants (hereafter also called the *h : j* contrast), although it can be reconstructed for proto-Mayan based on reflexes in various languages (Kaufman 1964: 84). Among the languages of the eastern branch that have preserved this contrast are Poqomam (Malchic Nicolás, Mó Isém, and Tul Rax 2000: 32), Poqomchii’ (Sedat 2001) and Popti’ (Ross Montejo and Delgado Rojas 2000: 34–35), as well as Kaqchikel and Tz’utujil (which have replaced proto-Mayan **h* with *w*), Q’eqchi’ (Alberto Tzul and

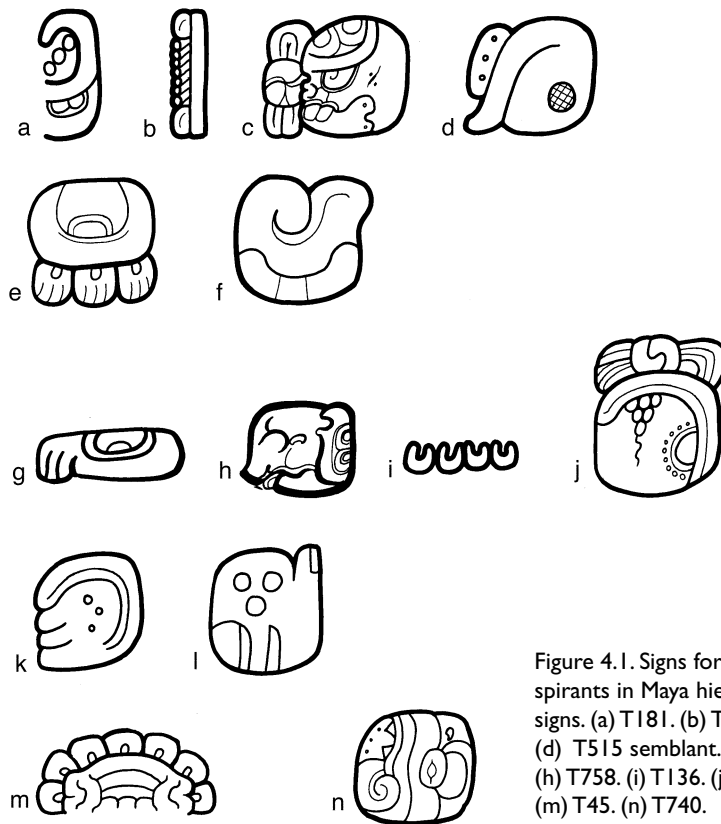


Figure 4.1. Signs for the velar and the glottal spirants in Maya hieroglyphic writing and related signs. (a) T181. (b) T12. (c) T60.1040. (d) T515 semblant. (e) T69. (f) T574. (g) T88. (h) T758. (i) T136. (j) T60:528. (k) T589. (l) T672. (m) T45. (n) T740.

Tzimaj Cacao 1997: 33; Freeze 1975: 20–21), Q'anjob'al and Chuj (Campbell 1984: table 2). In the K'ichee' dialect spoken at Cunén, the contrast is still marked in final position and only in one single case in word-initial position (Par Sapón and Can Pixabaj 2000: 48). In proto-Mayan, the contrast appeared in all positions in a word. It has been preserved into Greater Tzeltalan, and in Tzeltal and Tzotzil at least until the colonial period. Present-day Ch'olan languages have no *h* : *j* contrast, but there are some conditions under which Greater Tzeltalan **h* and **j* do not have the same reflexes in Ch'olan, which is taken by Kaufman and Norman (1984: 86) as evidence that proto-Ch'olan still preserved a distinction between **h* and **j*.

The Decipherment of Syllabic Signs Recording Spirants

When the decipherment of syllabic signs took place, scholars ignored the possibility that there could have been a phonemic contrast between velar and glottal spirants in the language of the hieroglyphs because the Ch'olan languages do not show a distinction between these phonemes. The existence of the contrast in colonial Yucatec documents has received comments by some linguists (Kaufman 1983), but has been overlooked by students of hieroglyphic writing. Although in the literature both graphemes *h* and *j* are employed, they are generally used to designate the same sound. In the following discussion, the orthographic symbol *h* will be used for the glottal, *j* for the velar spirant. In those cases where authors have not distinguished between the two phonemes, the symbol *h* will be used.

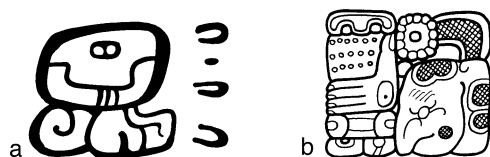


Figure 4.2. Readings with the signs T88, T136, and T758. (a) **wa-ji waaj** 'tamale' (Dresden Codex 30b). (b) **u-CHOK-wa ch'a-ji** 'he scatters incense' (Ixtutz Stela 4, B2).

The first sign identified as a spirant in Maya hieroglyphic writing was T181³⁹ for the syllable **ha** (Figure 4.1a).⁴⁰ Yuri Knorozov deciphered the sign for the syllable **ha** because of its occurrence in Landa's alphabet, where Landa's example for the word water (*ha*) includes T181 as its last element (Knorozov 1955a). In his publication, Knorozov is not explicit about the reading of T181. He considers it a syllable, but at the same time he refers back to Eduard Seler (1902–15, vol. 1: 698), who regards T181 as equivalent to the Yucatec "past tense suffix" of transitive verbs, *-ah*. In the same publication Knorozov also identified T12 as the male agentive *ah* (Figure 4.1b).

A second set of signs representing a syllable with a spirant has been identified by David Stuart (1987: 42–45). This was a set of three signs (T88, T136, and T758), each of which can represent the syllable **hi** (Figure 4.1g–i). Stuart provided a variety of contexts where **hi** signs either replaced Knorozov's **ha** or they produced productive new readings, such as a phonetic complement in the word *wah*, 'bread/tamales/food' in Chichen Itza (Figure 4.2a) and in *ch'ah* 'a drop of any liquid' in the so-called hand-scattering compounds (Figure 4.2b).

In 1987 Stephen Houston and I both arrived at the reading **ho** for the sign T589 (Figure 4.1k) (Houston 1988; Grube 1990a: 85). The **ho** reading was based on spellings of the verb for 'drilling' *hoch* in the codices and elsewhere as T589-**ch'o** (Figure 4.3a). A **ho** reading for T589 in these contexts was independently suggested by Ringle (1988: 13). In the Dresden Codex, the passage **nu-chu** T589-**lo** is found where two gods are shown in conversation (Figure 4.3b); obviously here the intended meaning is *nuch hol* 'they join their heads'. David Stuart added another argument to confirm the **ho** reading by showing that the sign is used to spell **u wo-ho-li**, *u wohol* 'the character of' in inscriptions from Northwest Yucatan⁴¹ (Figure 4.3c). Linda Schele made a suggestion for another **ho** sign in the so-called shell-fist title in 1989. She found two examples from Quirigua Stela A and a painted vessel from the Ik' site (K1453), where T672, the common main sign of the shell-fist title, is replaced by T589 (Figures 4.4a, b). She pointed out that the reading for the shell-fist title is **ch'a-ho-ma** and that it might be related to the word *ch'ah* 'scatter, drop of liquid' with an added agentive suffix *-om*. Furthermore, Schele (1989) showed that T672 is probably used as a numerical coefficient of five, *ho* of the K'atun period in the Initial series of Copan Stela E (Figure 4.4c).

At about the same time, evidence was presented for the reading of T69 as a sign for the syllable **he** (Figure 4.1e). This was based on substitution patterns from the Xcalumkin/Xkombec region, where **b'o-T69** and **b'o-ho** seem to alternate freely (Figure 4.5a), and on cases at Chichen Itza of replacement of T69 by Stuart's **hi** syllables in the

39. For the transcription of Maya hieroglyphic signs, Thompson's numbering system (1962) is used; transliteration conventions follow Stuart (1988).

40. All drawings are by the author, if not otherwise indicated.

41. Letter by David Stuart to Stephen Houston and Nikolai Grube, July 31, 1987.



Figure 4.3. The decipherment of T589. (a) **jo-ch'o** *joch'* 'to drill' (Dresden Codex 6b). (b) **nu-chu jo-lo**, *nuch jol* 'they join their heads' (Dresden Codex 9b). (c) **u-wo-jo-li**, *u wojool* or *u wojil* 'his hieroglyph' (Xcalumkin Column 6).

context of the *y-itah* 'companionship' expression⁴² (Figure 4.5b). Another sign that was identified as a candidate for a **he** syllable was T574 (Figure 4.1f), a sign that seemed to alternate with T69 in the context of a hieroglyph, which Stuart has tentatively identified as a word for *yete* or *yeh̄te*, and whose precise meaning is still debated (Figure 4.6). Stephen Houston demonstrated in 1987⁴³ that the "knot skull" sign T60.1040 is found in replacement for one of Stuart's **hi** signs in a spelling of the word *ch'ah̄* 'drop of liquid' on Caracol Altar 12 (Figures 4.1j; 4.7a). Based on that substitution and on the occurrence of the "knot skull" compound in place of T181 in Primary Standard Sequences from the Ik' site observed as early as 1981 by Houston, I suggested reading that compound as a **ha** syl-

42. Letter by Nikolai Grube to David Stuart and Stephen Houston, October 20, 1988.

43. Letter to Nikolai Grube by Stephen Houston, October 8, 1987.

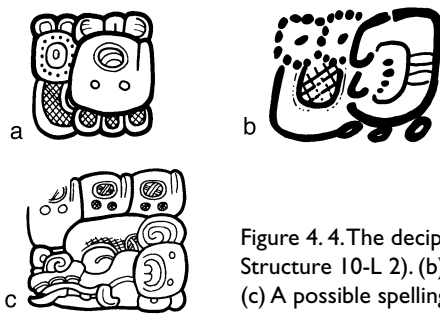


Figure 4.4. The decipherment of T672. (a) The “shell-fist” title with T672 (Copan Structure 10-L 2). (b) The “shell-fist” title with T589 (K1453, Kerr 1989–2000). (c) A possible spelling of the number five (*ho*) on Copan Stela E.

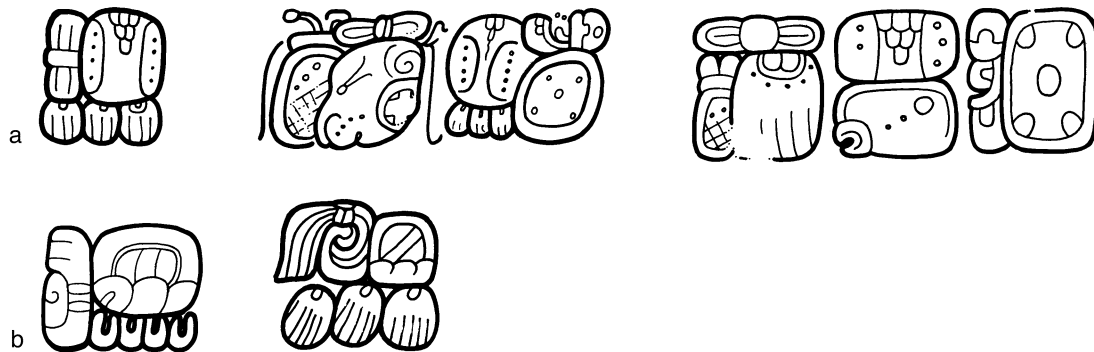


Figure 4.5. The decipherment of T69. (a) The substitution between T589 and T69 at Xcalumkin and Xkombe (first example: Xcalumkin Initial Series Building; second example: Xcalumkin Vase in the Kimbell Art Museum; third example: Xkombe Column). (b) The replacement of T136 by T69 in the *y-itaj* glyph at Chichen Itza. (first example: common lowland form; second example: Temple of the Four Lintels, Lintel 3, Chichen Itza).

ble in hieroglyphs writing *ahal* (a-T60.1040-1a) from Yaxchilan, Piedras Negras, and Palenque (Figure 4.7b). The decipherment of the compound as a $\underline{h}V$ sign could build on previous arguments for T60 as a sign with the consonantal value *h* proposed by James Fox and John Justeson (1984: 51). There is another $\underline{h}V$ sign that shows up in the same substitution set with T60.1040. This sign has not been distinguished by Thompson (1962) from T515. Although it shares the same outline with the syllabic sign for *chu*, it differs from *chu* in the small element with three dots inside attached to the left side of the sign (Figure 4.1d). Marc Zender has shown that this sign also occurs in a spelling of the word *kohaw* ‘helmet’ on Site Q Glyphic Panel 11 (Mayer 1987, Cat. no. 6, plate 66), thus confirming that it shares the phonetic value of *ha* with the “knot skull” compound (Zender, personal communication, December 2000).

Hu signs were discovered independently by MacLeod and Grube in 1989 (Grube 1989a, Grube 1990a: 60; MacLeod 1990: 340–41). The decipherment of T45 (Figure 4.1m) as $\underline{hu}$ was based mainly on spellings of the verb ‘arrive’ as T45-*li*, which shows up as Glyph D in the Lunar series where it refers to a count of days since the moon arrived (from its dark phase) (Figure 4.8a). They also found out that the combination T45-*li* is often followed by toponyms, hence describing the ‘arrival’ *hul* at these places. Other arguments in favor of a $\underline{hu}$ reading for T45 (and its variant T266) are spellings of $\underline{hu}$ -*chi* *huch*

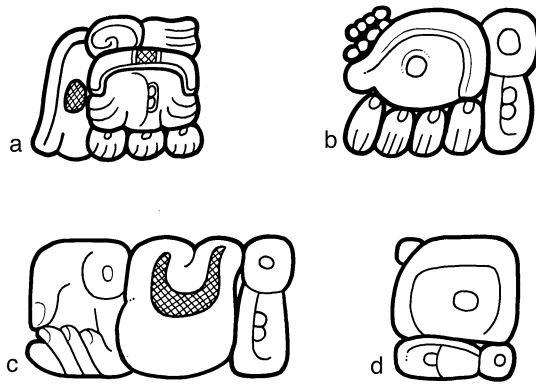


Figure 4.6. Variants of the yetej compound.
(a) Tablet, Art Gallery of Notre Dame University, Ap2 (Mayer 1980, Cat. no. 49).
(b) Yaxchilan, HS 5, Glyph 82. (c) Yaxchilan, HS 3, Step I, D2. (d) Caracol Altar 23, D5.

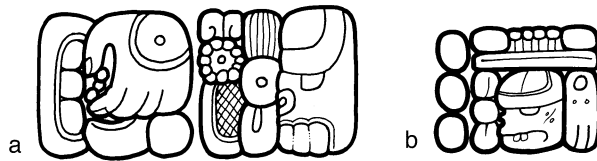


Figure 4.7. The "knot skull" glyph.
(a) **u-CHOK-wa ch'a-ha**, *u-chok[o]w ch'ah* 'he scatters incense' (Caracol Altar 12, G3). (b) **III-a-ha-li**, *ux ahil* 'three victories' (Yaxchilan HS2, E5).

'conch shell' on two shell ornaments (Figure 4.8b) and the decipherment of one of the most prominent war expressions as T45-b'u-yi u TOOK' PAKAL, where the first hieroglyph yields the verb *hubuy* 'to down, to lower' (Figure 4.8c).

Because of the replacement of the T45 sign by T740 in the context of the arrival verb in Palenque, Pomona, and Jonuta, Grube suggested that T740 must be another *hu* sign that was derived acrophonically from Ch'olan **huj* 'iguana' (1990a: 60) (Figure 4.1n).

In 1990 I identified the combination of T60.528 as a sign unit, which in several contexts replaces signs of the *hi* substitution set previously identified by Stuart (Figure 4.1j). One of the most prominent contexts of this combination is a form of the "child of father" glyph. Here, *si*- T60.528 seems to spell *sih*, either the root for 'gift' or 'birth' (Grube 1990a: 54–55) (Figure 4.9a). At about the same time, John Justeson suggested in a publication about Mayan representational conventions that the contrast between glottal and velar spirants was marked. He observed that phonetic spellings of CV*h* forms are rare and cited examples for *naah* 'house' and *b'eeh* 'road', which never occur with T181, a sign believed by him to be a *ja* suffix, whereas words with a velar spirant such as *taaj* 'pine torch' and *waj* 'bread/food' have a *ja* suffix (Justeson 1989: 34). His conclusion was that the glottal spirant was simply omitted and that the velar spirant was written with *jV* signs. This important observation did not generate further work about this issue, partly because at the time of Justeson's research, T181 was the only published and deciphered sign with a *jV* phonetic value. In a discussion of the *yi-chi* collocation in the Primary Standard Sequence, Barbara MacLeod noted that in those languages where the contrast between velar and glottal spirants is phonemic, words with an initial glottal spirant use the prevocalic set of pronouns because of the weakness of *h*. In her work she cites examples from colonial Yucatec Mayan such as the word for water, *ha*, whose possessed form is *uy-a*, or 'egg' *he*, which becomes *uy-e* when possessed⁴⁴ (MacLeod 1989b). Other scholars have occasionally



Figure 4.8. Arguments for the decipherment of T45. (a) **HUL-li**, *hul-i* 'he arrived'. (b) **ju-chi**, *juuch* 'conch shell' (Glyph E4), Cleveland Museum of Art Conch Shell, (drawing by Linda Schele in Schele and Miller 1986: 155). (c) **ju-b'u-yi u TOOK' u PAKAL**, *jub'uy u took' u pakal* 'lowered were the flint and the shield of ...' (Dos Pilas HS 4, Step V, E1-E2)

44. This phenomenon was first described by Fray Gabriel de San Buenaventura: "*La letra H, se ha de pronunciar sin aspiración. Los nomres, y verbos, que comiençan con esta letra, ordinariamente la pierden, y se declinan, y conjugan con el pronombre V; AV; Y; vg. halmahthanil, mandato, dirá valmahthanil, mi mandato, aualmahthanil, tu mandato, yalmahthanil, el mandato de aquel*" (San Buenaventura 1996 [1684]: 18). Ross Montejo and Delgado Rojas make the same observation for Popti': "*En todas las comunidades se notó que el uso de /h/ tiende a ser inconsistente en posición inicial cuando se poseen . . . las cuales no aceptan Juego A preconsonántico, sino prevocalico*" (2000: 35).

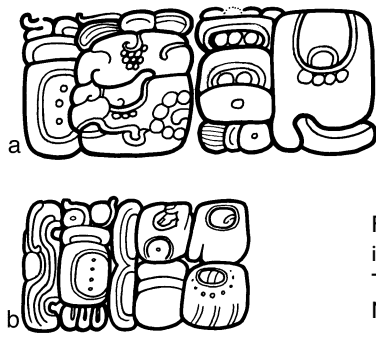


Figure 4.9. Arguments for the reading of T60:528: The substitution in the *sih* 'gift' compound. (a) **si-hi u-CHIT(?) -ti-CH'AB'**, Tikal Temple IV Lnt. 3, H7-G8. (b) **u-si-ji-u-chi-ti-CH'AB'-b'a**, Machaquila Stela 11, A6.

made observations regarding the fact that certain signs in the *ha* set seemed to be mutually exclusive and have referred to the distinction between velar and glottal variants as possible explanations, without being explicit in regard to the entire phenomenon.

A close inspection of the different signs representing spirants in Maya writing confirms the observation that there are two sets of signs that are hardly ever found in free substitutions. T181 never occurs in the same context as the "knot skull" T60.1040; T88, T136, and T758 are never found in the same context as T60:528; T69 and T574 seem to exclude each other; and T589 and T672 as well as T740 and T45 pertain to different sets and show hardly any overlap. Given this exclusiveness, which is violated only in Terminal Classic inscriptions to be discussed later, the best explanation seems to be in the scribal attempt to distinguish between glottal and velar spirants, and that this distinction was phonemic in the language of Maya inscriptions. The hypotheses to be tested, then, are that there is a marked contrast between velar and glottal spirants and that glottal and velar spirants are distinguished orthographically.

Testing the hypothesis

The hypothesis about a distinction between velar and glottal spirants is tested by comparing hieroglyphic data with linguistic data from the languages that either still have the *h : j* contrast or for which the contrast has been reconstructed from morphophonemic evidence. The following list represents the results of a thorough search of the corpus of Maya texts for all spellings that contain one of the syllabic signs known to involve the velar or the glottal spirant. The data are compared to lexical reconstructions as well as to lexical data from colonial and modern languages where the distinction between the spirants still exists. Relevant data is cited from Tzeltal (Tze), Tzotzil (Tzo), proto-Tzeltal–Tzotzil (PTZ), proto-Ch'ol (PC), proto-Maya (PM) and colonial Yucatec (CY) sources. In order to avoid speculation only those hieroglyphic spellings whose semantic interpretation is backed up by sufficient contextual evidence are included. Many spellings seem to be both phonetically transparent and accessible to semantic interpretations; nevertheless, there may not be any contextual confirmation that the word identified by the epigrapher is in fact the same as the one intended by the scribe. In such cases the form cannot be used to test the hypothesis. Furthermore, we must exclude spellings that are fully transparent in regard to the reading of their constituent signs but that do not correspond to attested lexical items in the sources that distinguish the two spirants. In order to dis-

cern a possible pattern, the comparisons between hieroglyphic spellings and linguistic data are sorted according to the individual syllabic signs (T45;⁴⁵ T69; T88; T136; T181; T574; T589; T672; T740; T758; T60.528; T60.1040) (Figure 4.1) that are contained in the spellings and whose value as either hV or jV is to be tested.

Spellings with Spirant+Vowel a

With T181)

- a-T181-wa ‘lord, king’, cf. PC **ajaw* ‘king, lord’, Kaufman and Norman 1984: 115
 IXIK-ta-T181-la/TUUN-ni ‘Lady torch stone’, cf. PC **täj* ‘pine’, Kaufman and Norman 1984: 131 (Yax. Lnt. 23, J2–K1)
 ta-T181-la/MO’-o ‘torchy macaw’, cf. PC **täj* ‘pine’, Kaufman and Norman 1984: 131
 tz’a-T181-la-K’AK’ ‘put-under-water (?) fire’, cf. PC **tz’äj* ‘dip’ (Sacul St. 1)
 u-T181-chi ‘the engraving of’, perhaps related to TZE *ghachob* ‘peine’, Humberto Ruz 1986: 285; YUC *haach* ‘aguzadera, la desolladura hecha contra cosa dura, raspadura’ (Pérez 1898) (COL New York Shell; Dzibilchaltun Shell)
 T181-tz’a-la/u-K’AK’ ‘lit is the fire of’, cf. PC **jätz* ‘whip, beat’, Kaufman and Norman 1984: 121; CY *hatz*’ (recia) ‘azotar’, Martínez Hernández 1929: 359 (Ixtutz Panel 2, Escobedo Ayala 1991: Fig. 19)
 u-T181-yi ‘the thin (ceramic?) of’ or ‘the calabash of’, cf. PC **jay* ‘delgado’, Kaufman and Norman 1984: 121; or PTZ **xay* ‘tol, calabazo para tortillas’, Kaufman 1972: 122
 sa-T181-la ‘secondary lord’, perhaps related to Tze *zagh zagh* ‘bajo en voz’, Humberto Ruz 1986: 422
 T181-tz’a-yi ‘hit, beat’, cf. PC **jätz* ‘whip, beat’, Kaufman and Norman 1984: 121 (COL, panel of unknown provenance)
 T181-wa-TE ‘face up dish?’, cf. Tzo *javan* ‘lay face up’, Laughlin and Haviland 1988: 207; PC **jäw* ‘face up’, Kaufman and Norman 1984: 121
 unpossessed noun-T181 ‘qualitative abstraction suffix’, cf. PM –Vj, Houston et al. 2001
 ya-T181-K’UH-na ‘the man of the K’uh-na (?) of’, cf. PC **aj* ‘prepound/proclitic male; relatively large/active being’, Kaufman and Norman 1984: 139
 na-T181-yi ‘it gets forgotten’ (?), cf. PC **naj* ‘forget’, Kaufman and Norman 1984: 126 (Palenque Temple XVIII Stucco)

(with T60.1040)

- T60.1040-o-b’a ‘these, those’, cf. PC **ha-in* ‘this, that’, Kaufman and Norman 1984: 139 (Copan Temple 11)
 T60.1040-i ‘this, that’, cf. PC **ha-in* ‘this, that’, Kaufman and Norman 1984: 139
 YAX-T60.1040-li wi-tzi-na-la ‘green watery (?) mountain’, cf. PC **ha* ‘water’, Kaufman and Norman 1984: 120 (Palenque, TFC)

45. Thompson (1962) distinguishes between the three different but similar signs, T45, T166, and T331. In fact, these three are simply graphic variants of the same grapheme. All three occur in the same contexts (Grube 1990: 88). I suggest using only T45 for the transcription of this grapheme.

- yu-T60.1040 ‘the collar jewelry of’, PC **uy* (or **uhy?*) ‘necklace’, Kaufman and Norman 1984: 135 (COL shell gorget)
 u-T60.1040 ‘collar jewelry’, cf. PC **uy* (or **uhy?*) ‘necklace’, Kaufman and Norman 1984: 135
 T60.1040-ma-li-ya ‘was untied’, cf. PC **jäm* ‘open’, Kaufman and Norman 1984:121; Tze *ghamon* ‘abrir’, cf. Humberto Ruz 1986: 286 (Palenque Palace Tablet)
 IXIK-a-ku-lu/pa-ta-60.1040, cf. PC **päta(h)* ‘guava’, Kaufman and Norman 1984: 128 (Bonampak St. 1, 2)

Spellings with Spirant+Vowel e

(With T574)

- che-T574-na ‘so he/she/it says’, cf. PC **che* ‘quotative particle’, Kaufman and Norman 1984: 139; PTZ **x-chih* ‘dijo’, Kaufman 1972: 157 (Seibal Hieroglyphic Stairway 1)
 ye-T574-te ‘the likeness of?’, cf. PC **ehtal* ‘likeness’, Kaufman and Norman 1984: 120 (Yaxchilan Hieroglyphic Stairway 3, Tread 1)

(With T69)

- ye-T69-te ‘the likeness of?’, cf. PC **ehtal* ‘likeness’, Kaufman and Norman 1984: 120 (Yaxchilan Hieroglyphic Stairway 5)
 ye-te-T69 ‘the likeness of?’, cf. PC **ehtal* ‘likeness’, Kaufman and Norman 1984: 120 (Palenque Palace Tablet)
 u-T69⁴⁶-le-wa ‘he transforms it’, cf. PC **jel* ‘take turn’, Kaufman and Norman 1984: 121; CY *xel* ‘successor, replacement’ (strong <h>), Ola Orie and Bricker 2000: 313; (Palenque, Tablet of the Foliated Cross, E6)

Spellings with Spirant+Vowel i

(With T60 or T60:528)

- na-T60:528 ‘house’, cf. PTZ **nah* ‘house’, Kaufman 1972: 111
 u-na-T60:528 ‘first’, cf. PC **nah-* ‘in front, forward, before, first’, Kaufman and Norman 1984: 138 (Palenque Temple XIX Stuccos)
 T60:528-na ‘this, that’, cf. PC **ha’-in* ‘this, that’, Kaufman and Norman 1984: 139 (Kerr 1398, Kerr 1440)
 9-T60:528-na-T181 ‘nine seeds’, cf. PC **(h)inah* ‘seed’, Kaufman and Norman 1984: 120 (Tortuguero Mon. 6)
 b’a-T60 ‘impersonation, image’, cf. Tzo *bail* ‘face, presence’, Laughlin and Haviland 1988: 161
 T60-JAGUAR ‘jaguar’, cf. CY *hix*, *ix* ‘jaguar, tigre’
 T60:528-li ‘rest’, cf. PC **hil* ‘rest’, Kaufman and Norman 1984: 120 (CPN Altar Q)

46. This seems to be one of the rare uses of the full form of T69.

- si-T60:528 ‘gift?’, cf. PC **sib* ‘gift’, Kaufman and Norman 1984: 130 (Tikal Temple IV, Lnt. 3)
- och-b’i-T60:528 ‘enter road’ cf. PC **b’ih* ‘road’, Kaufman and Norman 1984: 117; Tzo *be* ‘path, road, way’, Laughlin and Haviland 1988: 165; Tze *sbehlal* ‘su camino’, Slocum and Gerdel 1965: 120 (Ceramic vessel K6751)
- ya-T60:528-?⁴⁷ adverb, ‘at the same time?’, cf. PC **ha’el* ‘also’, Kaufman and Norman 1984: 139 (alternatively, this could also be related to the PC demonstrative **ya’(i)* ‘there, yonder’, Kaufman and Norman 1984: 139)
- T60-chi ‘pulque’, cf. PC **chih* ‘century plant and fiber’, Kaufman and Norman 1984: 118

(With T88/136/758)

- ch’a-T88/T136/T758 ‘drops of a liquid, drops of incense’, cf. Yuc *ch’ah* ‘gota de agua, orina, o de otro licor’, Martínez Hernández 1929: 323; CY *c’ax* ‘drip’, Ola Orie and Bricker 2000: 314
- wa-WAAJ-T136 ‘tamale’, cf. PC **waj* ‘food’, Kaufman and Norman 1984: 135; PTZ **waj* ‘tortilla’, Kaufman 1972: 121
- chi-T88/T136 ‘deer’, cf. PC **chij* ‘deer’, Kaufman and Norman 1984: 118
- ta-T136 ‘obsidian’, cf. CM **tyaj* ‘obsidian’, Kaufman 1964

Spellings with Spirant+Vowel o

(With T589)

- T589-ch’o ‘drill’, cf. Tzo *joch* ‘bring by force, carve . . .’, Laughlin and Haviland 1988: 211
- u-to-589-1i ‘the price of, the payment of’, cf. PC **toj* ‘pay’, Kaufman and Norman 1984: 132; *tojol* ‘precio, valor, paga’, Aulie and Aulie 1978: 113; (K1728, Kerr 1989–2000), Jonuta Stela)
- T589-mo-yi, ‘falling down’, cf. CY *homah* (h inicial recia) ‘desplomar lo abovedado’, Martínez Hernández 1929
- T589-lo ‘head, cf. PC **jol* ‘head’, Kaufman and Norman 1984: 122; CY *hool* (recia) ‘cabeza’, Martínez Hernández 1929: 396; *xo?ol* ‘head, hair’, Ola Orie and Bricker 2000: 314
- u-k’o-T589 ‘the mask of, cf. PC **k’oj* ‘mask’, Kaufman and Norman 1984: 124 (Site R Lintel)

(With T672)

- T672 ‘five’, cf. PC **ho* ‘five’, Kaufman and Norman 1984: 138 (Copan Stela E)

47. The main sign of this collocation has been interpreted by Federico Fahsen as a hieroglyph for self-sacrifice (1987). However, the collocation is always found after a date that is followed by two sentences. In these contexts it introduces the second sentence. On Tikal 12, the date 9.4.13.0.0 is followed by a phrase describing a *k’al tuun* event by the “Lady of Tikal,” then a second phrase associated with the same date and introduced by the *ya-hi-*? collocation continues *tz’a[h]paj u lakamtuunil* and names Kaloomte Balam as the subject.

IX-T672-b'i 'intelligent woman (?)', cf. CY *hobon ol* 'habil, ingenioso, inventivo y sabio' (Martínez Hernández 1929: 427)

Spellings with Spirant+Vowel u

(With T45)

TI-K'AK'-la/T45-lu 'with the fiery spear', cf. PC **jul* 'shoot with a gun', Kaufman and Norman 1984: 122 (Yaxchilan Lintel 24)

T45-lu B'AAK 'bloodletting bone?', cf. Tzo *jul* 'bleed, chisel, engrave, hurt with a spur, mark . . . pierce . . .', Laughlin 1988: 215; Tze *julel* 'inyectar, sangrar', Slocum and Gerdel 1965: 152; CM *xul* 'focus, thread needle' (strong <h>), Ola Orié and Bricker 2000: 314; (Tikal MT 42b)

u-T45-chi 'the conch shell of', cf. Tze *ghuch* 'osti6n', Humberto Ruz 1986: 296 (COL Cleveland Conch Shell)

ch'a-T45 'lazy, negligent', cf. Tzo *ch'aj* 'lazy, negligent, slow', Laughlin and Haviland 1988: 194; Tze *ch'aj* 'flojo, ocioso, perezoso', Slocum and Gerdel 1965: 135 (Grube and Nahm 1994: 707)

T45-ku-b'i 'canoe', cf. PC **jukub* 'dugout', Kaufman and Norman 1984: 122 (Piedras Negras Pan. 2)

(With T740)

T740-na 'book', cf. PC **hun* 'paper, book', Kaufman and Norman 1984: 120; CY *húun* (simple) 'papel, carta o libro', Martínez Hernández 1929: 432

u-SAK-T740-na-la 'the white paper? of', cf. PC **hun* 'paper, book', Kaufman and Norman 1984: 120; CY *húun* (simple) 'papel, carta o libro', Martínez Hernández 1929: 432

u-K'UH-T740-lu 'sacred', cf. PC **ch'uh* 'god, holy thing', Kaufman and Norman 1984: 119 (Palenque TI, Middle Tablet)

cha-T740-ku 'lightning',⁴⁸ cf. PC **chabuk* 'lightning, thunder', Kaufman and Norman 1984: 117 (Piedras Negras Throne 1)

k'u-740 'god', cf. PC **ch'uh* 'god, holy thing', Kaufman and Norman 1984: 119 (COL Jade Ornament, Yaxchilan Lnt. 47)

T740-li 'arrive', cf. PC **bul* 'arrive here', Kaufman and Norman 1984: 120

Interpretation of the data

The analysis of the above data suggests that Maya scribes observed the orthographic distinction between velar and glottal spirants in the script. This distinction was observed for the most part of the Classic period. It begins to disappear in word-final contexts during the Late Classic and is preserved in only a few contexts in some of the late texts, such as in the codices.

In the case of the spirants combined with the vowel *a*, which is the largest group in the corpus, there is a clear pattern that links spellings where *ja* is expected to T181 and

48. Glyphic identification by Grube in Grube et al. 1991: 112.

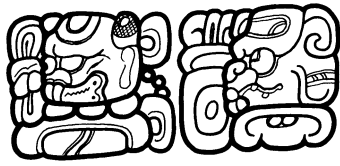


Figure 4.10. The verb *jamlilij* used in a death statement (possibly related to the ‘untying’ of the *sak hu’un*, the ‘white headband’) on the Palace Tablet of Palenque, N13–M14

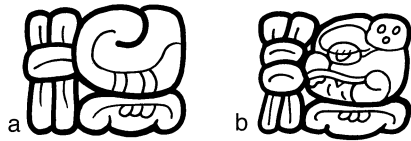


Figure 4.11. Evidence for glottalization in the quotative particle *chehe’n* / *che’en*. (a) **che-he-na** (Robicsek and Hales 1981: Codex Vase 54). (b) **che-e-na** (Tikal, bone from Burial 190, Tikal MT 167)

spellings with *ha* to T60.1040. The only exception is an idiosyncratic verb on the Palace Tablet from Palenque, which seems to be an expression related to death or burial. The hieroglyph has traditionally been related to the Ch’olan verb for ‘untie, lose’, since it is followed by the statement **U-SAK-HU’N-na**, ‘his white headband’ (Schele et al. 1990) (Figure 4.10). However, if T60.1040 indeed renders **ha**, this form would either have to be explained with a different lexeme since the word for ‘untie’ is reconstructed as **jäm* by Kaufman and Norman (1984: 121),⁴⁹ or one would have to assume that ‘untie’ was pronounced with an initial glottal spirant at Palenque.

Spirant plus vowel *e* combinations are quite rare in the corpus of Maya inscriptions. However, a clear distinction between T69 and T574 can be observed in the script. Besides the examples listed above, T574 has a common occurrence in a K’in variant that is exclusive in Distance Numbers (Thompson 1950: fig. 31, 1–8; Lacadena and Wichmann 2000: table 1). Although this form cannot yet be explained, it seems significant that T69 never replaces T574 in these contexts.⁵⁰ At the same time, T574 is never replaced by T69 in the common quotative expression. At Tikal and Copan, spellings of this quotative are found where T574 is replaced by a plain *e* (Grube 1998) (Figure 4.11). This suggests that T574 represents **he**, while T69 represents **je**. The distinction between T69 and T574 is blurred in Terminal Classic texts from Yaxchilan, where a still underexplored agency expression (or possessed noun), which is spelled **ye-he-te** in Classic texts becomes **ye-je-te** in Terminal Classic inscriptions (Yaxchilan Hieroglyphic Stairway 5) (Figure 4.6). This particular expression—often found between the name of a captive and his captor or between a subordinate lord and his patron—shows an unusual behavior that is still difficult to explain. At Tonina, Dos Pilas, and Caracol this expression is written **ye-te**, while in the westernmost extension of the Maya lowlands, in Palenque, Pomoná, and Jonuta, **ye-te-je** clearly is the standard spelling. Eventually, when analyzed in greater depth and in

49. In this context, note colonial Q’eqchi’ *ham ‘deshazer, y qudo. se caen todos los dientes’* (Freeze 1975: 43).

50. One could of course argue that this is the case because T69 is an affix, while T574 is a main sign, and that the two suffixes found with this variant (T23 and T130) are also affixes, so that a scribe who wanted to fill an entire glyph block had to rely on the larger T574. However, there are also main sign variants for the syllables **wa** and **na** which a scribe could have used if there were a free substitution between T69 and T574 (Grube 1990a: 71–72).

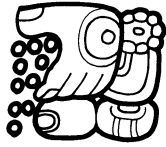


Figure 4.12. T93 as a logographic sign for **CH'AAJ** 'incense', in the antipassive construction **CHOK-CH'AAJ-wa**, 'he incense-scatters' (Arroyo de Piedra Stela 2, C3).

conjunction with other data, these spelling differences are expected to point to certain dialect areas within Classic Mayan (Houston et al. 2000; Lacadena and Wichmann 2000).

The next set of data are those spellings that include spirant + vowel *i* syllables. This is the second largest group after the spirant + *a* syllables. Here, the three signs T88, T136, and T758 are found in free substitution, excluding T60:528. While the comparison between the occurrence of signs and lexical data suggests that T88, T136, and T758 correspond to the velar, and T60:528 to the glottal spirant, some of the suggested readings and interpretations require further discussion. The decipherment by Love (1987) of the main sign T93 as the syllable **ch'a** and the logogram **CH'AH** was partially based on a reinterpretation of the visual referent of the grapheme as incense, based among other evidence on the similarity of the sign with glyphs reading *pom* 'incense' in the Dresden Codex. In addition, *chahalte* is described by Landa as a specific kind of incense (Tozzer 1941: 144). A closer inspection of the root shows, however, that *ch'ah* is a noun 'drop', as in '*gota de agua, orina, o de otro licor*' (Martínez Hernández 1929: 323). Landa's word for 'incense' can therefore be analyzed as *ch'ah-al-te*, or 'drops of a tree'. The fact that most dictionaries of colonial Yucatec Mayan spell the word for 'drop' with a final *h* suggests that the word ended in a velar spirant. Glottal spirants are not represented in the colonial orthography of Yucatec (Ola Orie and Bricker 2000). There are also other languages that have a related word for 'drop(s)', where the final consonant is the velar spirant. The Mam forms *ch'aj ch'aj* (af) '*ruido de gota de agua*' and *ch'ajat* '*chapotear el agua, regar demasiado agua en el suelo*' (Maldonado Juan et al. 1986) could be the same etymon because initial *ch'* in Mam can indeed correspond to Ch'olan initial *ch'* provided that both are from proto-Mayan **tʰ* (Wichmann, personal communication 2001; Campbell 1984: table 2). Colonial Tzeltal *chagh* '*enjuagar como jícara echandole como piedrecitas dentro*' (Humberto Ruz 1986) may also be related, although the nature of the first vowel is not known because the source does not distinguish between /ch/ and /ch'/. Even though a root **ch'aa* 'drop, drops' cannot be found any more in any of the Ch'olan languages, the hieroglyphic evidence suggests that Ch'olan had such a root that was at some time replaced by **tʰul* and **tʰuj* (Kaufman and Norman 1984: 133). **Ch'aa* may have been a very specific kind of drops, presumably drops of incense (Hammond 1981; Love 1987: 11). The sign T93 is logograph for **CH'AAJ** 'drop, drops', as suggested by the occasional absence of the *-ji* suffix in many Classic period texts (Figure 4.12).

Another form that needs explanation is the word for 'road'. Whenever the hieroglyph for 'road' stands alone and is not incorporated into a verbal phrase, it is spelled **b'i-hi**, as expected (Figure 4.13). However, the most common contexts of this noun are within an intransitive verbal phrase based on a combination of the two roots *och* 'enter' and *b'ih* 'road', which has been interpreted as a metaphorical expression for 'death' by Freidel et al. (1993) and Stuart (1995). The *ochb'ih* compound usually is followed by the name of the dead individual as the subject of the sentence. Here *b'ih* cannot be the subject, nor can

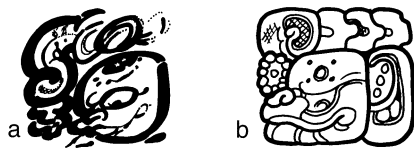


Figure 4.13. Spellings of the noun for ‘road’ in the *och-b’ih* compound. (a) **OCH-b’i-hi** (The “Dynastic Vase”, K6751, Kerr 1989–2000, N4). (b) **OCH-b’i-ja** (Palenque, stucco from Temple 18, Schele and Mathews 1979: 462).



Figure 4.14. The “shell-fist” title (Copan Structure 10-L 2).

it be the object of a verb whose inflection follows the intransitive paradigm. Although it is theoretically possible that the verb root is transitive and has become intransitive through the incorporation of the direct object, *och* is never seen with ergative pronouns and transitive status markers, making this interpretation impossible. Furthermore, cognates of the verb root *och* ‘enter’ are intransitive in all Mayan languages. The verb *och-b’ih* seems to be part of a class of verbs that I would call “intransitive compounds.” These are formed of an intransitive root and a noun and include (besides *och-b’ih*) examples such as *och-ha* (‘water-enter’, another death expression), *och-k’ahk’* (‘fire-enter’, a dedication event), *chum-tuun* (‘stone-seating’), *chum- tz’am* (?), Palenque 96 Glyphs, ‘throne-seating’) and *el-naah* (‘house-burn’, another dedication event). These compounds can have full verbal inflection as intransitive verbs. The occasional *-ji* and *-ja* suffixes may yield the perfective status marker identified by MacLeod (this volume). Although these status markers are expected only with derived transitives, they also appear with intransitive verbs in Acalan Chontal (MacLeod, this volume). The ‘enter-road’ death phrase is also found with the widely discussed *-ji-ya* (*-jiy*) suffix. When *-ji* or *-ja* syllables are attached to the word *b’ih* they always serve to render distinct grammatical morphemes but not as phonetic complements.

The word for deer is written with the velar spirant *ji* as expected. However, in Terminal Classic texts some spellings are found with a final *hi*.⁵¹ These attest to the collapse of the *j : h* distinction in the second half of the Late Classic, which will be discussed later.

Yet another problematic group is that of the spirants combined with the vowel *o*. It is problematic because the number of contexts for the suggested *ho* syllable T672, which can be compared with lexical data from languages where the *j : h* distinction is marked, is extremely limited. Schele (1989) has suggested that T672 is used on Copan Stela E to write the K’atun coefficient of ‘five’, *ho* (Figure 4.4c). However, she has not explained why T672 is tripled. Furthermore, the entire Initial Series is highly idiosyncratic. The Calendar Round is unusual and provides no proof for the suggested reading of the date. T672 is part of one of the most common title glyphs, the so-called shell-fist title (Figure 4.14). In this context T589 is never found (except for a few late texts), suggesting that T672 and

51. *Chi-hi* spellings are found on Quirigua St. E (9.17.0.0.0), Piedras Negras Stela 12 (9.18.5.0.0), Tonina Mon. 175 (9.18.9.3.7), and a Late Classic plate from the Uaxactun area (Zender 2000c: 1040–41). There are other *chi-hi* spellings where we have no semantic control as to whether they indeed refer to ‘deer’.

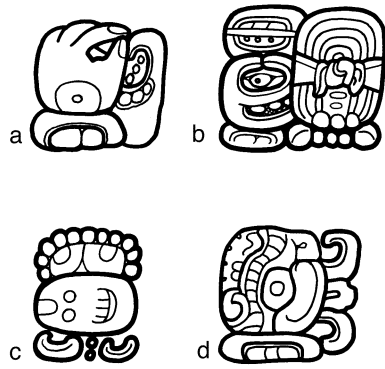


Figure 4.15. Forms of the arrival verb. (a) T713b as **HUL** in **HUL-li** (the moon sign is part of the logogram) (Copan Altar Q). (b) The “moon sign” variant as **HUL: i-HUL-li MUTAL-la** ‘and then he arrived at Tikal’ (Tikal Temple IV Lnt. 3). (c) A T45 semblant as a logographic sign for **HUL: HUL-li-ya** ‘he arrived then’ (Copan HS). (d) A fully phonetic spelling: **hu-li-ya** ‘he arrived then’ (Palenque, Temple of the Cross, A11).

T589, the *jo* syllable, were kept apart. In all contexts where T589 is used, the corresponding lexical entry requires a velar spirant, confirming the reading of T589 as *jo*.

The last set of signs to be discussed are the ones that combine the velar or glottal spirant with the vowel *u*. The data show that T45 must be the velar, while T740 should be the glottal spirant. Contrary to earlier assumptions, fully phonetic spellings of the word for ‘arrive’ are rare. Scribes in the Early and Late Classic periods used a large variety of logographic signs to render the word *hul* ‘arrive’. The most common logographic sign is the ‘pointing hand’ sign T713b, which is already found on Early Classic monuments (Figure 4.15a). Houston (personal communication, March 2001) points out that the T181 element found together with this form of the arrival verb cannot be a grammatical element but must represent part of the compound of signs that forms the logogram.⁵² Another logographic sign for the word **HUL** is a variant of the moon sign with an infixed eye (Figure 4.15b). This sign does not show up in the corpus of Maya inscriptions before the beginning of the Late Classic period. Finally, there is a third graphic form for **HUL** (Figure 4.15c). At a first glance, this sign looks similar to the T45 *ju* sign. The fact that this sign is regularly accompanied by a *li* syllable was taken by several scholars as an argument that it was used to render the word *hu-li* and therefore a confirmation for the syllabic decipherment of the sign. With the discovery of distinct signs for glottal and velar spirants, it became clear, though, that the word for ‘arrival’ had to be spelled with a *hu* and not with a *ju* syllable. Furthermore, in several contexts, especially within Glyph D of the Lunar Series, the sign T45 could stand alone, without a *li* suffix attached to it, suggesting that it had to be a logographic sign for the word **HUL**. A closer inspection of this variant of **HUL** signs shows that it is distinguished from T45 by the varying size of the circles and dots marking the outline of the sign. The **HUL** sign on the Temple XIX Tablet from Palenque looks as if the iconic origin of the sign was a human footstep.

Syllabic spellings of the arrival verb occur only in the Late Classic period and are limited to sites in the extreme west of the Maya lowlands—Palenque, Pomona, and Jonuta. These consistently and without a single exception always use, as expected linguistically, T740 *hu* in spellings of the arrival verb.

52. Interestingly, with the inclusion of the moon sign, this particular logogram establishes a semantic parallel between the ‘arrival of the moon’ and the arrival of royal women (such as the arrival of Lady Six Sky at Naranjo and Lady Batz’ Ek’ at Caracol [Martin and Grube 2000: 74, 91]). The iconography of the Moon Goddess seems to be intimately related to Maya royal women.



Figure 4.16. The glyph for Itzmanaaj with a -ji suffix (Palenque Temple 19, Bench, D7).

Implications

The identification of an orthographic distinction between velar and glottal spirants has wide implications for our understanding of Classic Mayan as well as for specific hieroglyphic decipherments. First, it can be shown that Classic Mayan had a *j* : *h* distinction in all contexts. Second, it can be shown that, contrary to previous assumptions by Justeson (1989: 34), root-initial *h* is written as in the following examples: *hao'b* 'those'; *ha'i* 'this, that'; *haj* 'sign' (?); *hiin* 'this, that'; *hinaj* 'seed'; *hil* 'rest'; *ho* 'five'; *hu'n* 'book'; and *hul* 'arrive'.

Maya scribes wrote only root-initial, root-final, and intervocalic *h*. In consonant clusters, *h* was not written. In CV*h*C / CV*h*CVC roots, *h* is not represented. This does not imply that *h* was not pronounced, only that there was no possibility to write *h* in consonant clusters. Proto-Ch'olan roots such as **muhk* 'bury', **tz'ihb* 'write', and **b'ahlam* 'jaguar' (cf. Kaufman and Norman 1984: 144) are rendered as *mu-ku*, *tz'i-b'i*, and *b'a-la-ma*, thus without any indication of the infix *h*. The failure to write *h* in combination with another consonant has already been observed with regard to Classic Mayan CV*h*C-*aj* passives (Bricker 1986; Grube 1990b: 212; Lacadena 2000, this volume; Houston et al. 2000: 333; Wald 2000c). The underrepresentation of *h* in these contexts is not only a consequence of the weakness of this consonant but also due to the fact that in a writing system which makes use of CV syllables, consonant clusters are difficult, if not impossible, to render.

The orthographic distinction between velar and glottal spirants also casts doubt on some widely accepted readings and interpretations of hieroglyphs. One of the most common titles in the corpus of hieroglyphic inscriptions is the already mentioned "shell-fist" or "fire-fist" title (Figure 4.14). This title, first recognized by Proskouriakoff (1973) was later deciphered by Schele (1989) as a reference to royal bloodletting and translating as 'scatterer' or 'he who scatters', based on the word *ch'ah*, which is glossed as '*gota de agua, orina, o de otro licor*' in the Yucatec Motul dictionary (Martínez Hernández 1929: 323). However, with a new understanding of the main sign of the shell-fist title we now know that it was read *ch'ahoom*. It is possible that the title was based on the root 'smoke', *ch'ah* (cf. Slocum and Gerdell 1965: 135; Laughlin and Haviland 1988: 194) and the agentive suffix *-oom*. The root contained in *ch'ahoom* cannot be related to the logogram T93 CH'AAJ 'drops' since the latter contains a velar spirant. However, the Greater Tzeltalan root for 'incense' and 'smoke' can be reconstructed as **ch'ah*. The best translation for the shell-fist title thus is 'the one who makes smoke' or 'the one who casts incense'. There is no evidence for this title to be related to autosacrifice or to drops of any liquid, as initially suggested by Schele (1989).

Another reading widely cited in the literature is that of the name of Schellhas's God D as 'Iguana House' (Thompson 1970: 233). The nominal glyph of God D in the Classic period always is rendered with a -ji phonetic complement (Figure 4.16). Since the noun 'house' is *naah* in Classic Mayan, it is unlikely to be part of the nominal collocation.



Figure 4.17. The context-dependent spelling mediopassive - *yich* versus passive - *jich* in the Primary Standard Sequence. (a) **yi-chi** (after Reents-Budet et al. 1994: 146-47). (b) **ji-chi** (Codex Style Vase).

A problematic issue that remains to be solved is the so-called Manik Collocation from the Primary Standard Sequence. This hieroglyph was first described in the pioneering study of the Primary Standard Sequence by Michael Coe (1973). MacLeod observed that the collocation consists of the hand for the syllable **chi** and a single prefix, which can alternatively be either the sign for the syllable **yi** or one of the signs from the **ji** substitution set (MacLeod 1989b: 27). She concluded that **yi-chi** was the realization of **u-hich* ‘the writing surface of’, and that the initial *y-* represented the possessive pronoun before a weak spirant. The new observations about the *j : h* distinction argue against MacLeod’s solution, since the **ji-chi** collocations begin with a velar spirant that would have been possessed with a preconsonantal ergative prefix *u-* rather than with a form of the prevocalic set.

A more likely explanation for this compound takes into account the different environments where the glyph can appear within the Primary Standard Sequence. Syntactically, the compound always follows the verbal phrase and precedes a possessed object. If the compound is written **ji-chi**, the preceding verb is always a passive construction (*tz’i[h]b’naj* or *k’a[h]laj*) (Figure 4.17a). The form **yi-chi** is found almost⁵³ exclusively after mediopassives (*t’ab’ay*, the God N verb, etc.) (Figure 4.17b). This distribution suggests that there is a correspondence between the final consonant of the preceding verbal phrase and the selection of the consonant in the **jich/yich** collocation. The progressive assimilation indicates that the underlying form could have been **hich* or **ich*. Furthermore, the fact that the collocation never occurs without the preceding verb suggests that it was a verbal suffix, a kind of suffix which could be added to a passive or mediopassive verb. It may be the case that this suffix is related to the suffix **-ik* which derives verbal nouns from intransitive verbs in K’ichee’, Tz’utujil, and Kaqchikel, but this hypothesis awaits further scrutiny.

The distinction between glottal and velar spirants is also useful in the definition of dialect areas. In the context of the Primary Standard Sequence, the common nominalized passive of the derived transitive **u-tz’i-b’i-na-ja-la**, *u tz’ib’najal* ‘his writing’ (lit., ‘his something that has been written’) is always spelled **u-tz’i-b’i-na-ha-la**, *u tz’ib’nahal* on ceramics from the Ik’ site workshop (Reents-Budet et al. 1994). This distinction is preserved

53. The exceptions are so few that they cannot alter the general impression that **yi-chi** always follows mediopassives. There are only two or three vases from Tikal and Uaxactun where passive verbs precede **yi-chi** instead of the expected **ji-chi**.

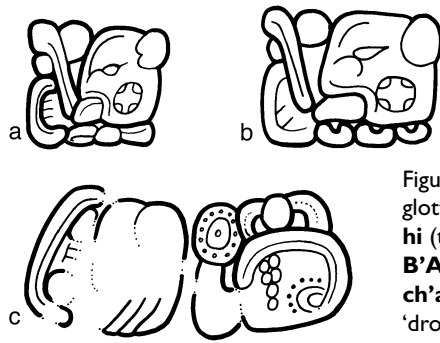


Figure 4.18. The collapse of the distinction between velar and glottal spirants in Terminal Classic texts. (a) **CH'AK-B'AAH-hi** (the "Classic" spelling; Yaxchilan HS 2, A2). (b) **CH'AK-B'AAH-ji** (the new spelling; Yaxchilan HS 2, C1). (c) **U-CHOK ch'a-hi** (note the use of *ch'aah* instead of earlier *ch'aaj* 'droplets'; El Chorro Altar 4, C1–D1).

consequently on all ceramics from this workshop and indicates that the status marker for derived intransitives was *-ah* in the dialect of Classic Mayan used in the north-central Peten (for the identification of the status marker for derived intransitives, see Lacadena, this volume).

The Collapse of the System in the Terminal Classic Period

At some time during the Late Classic period, the orthographic distinction between velar and glottal spirants began to disappear in certain regions of the lowlands. This may have occurred for two reasons: (1) the shift may have been a purely orthographic one, or (2) the new spellings continued to render the language, and the shift was from a marked distinction to unmarked in Classic Mayan. It is highly plausible that the emergence of a lack of distinction reflects actual linguistic change. Ch'olti' as recorded by Padre Morán no longer has any traces of a phonemic distinction between the glottal and velar spirants. When Landa elicited his "alphabet," the word for 'water' (*ha'*) was spelled by his informant with what had been the sign for *ja*. Since Yucatec maintained a *j : h* distinction much longer than the Ch'olan languages, Landa's example either shows that the script began to ignore features of the language or that Gaspar Antonio Chi committed an error.⁵⁴

Although more data need to be compiled, it seems already possible to determine a general east-west direction of the collapse of the *j : h* distinction. The earliest evidence for the loss of the distinction is from Belize and the eastern Peten and dates to 9.14.0.0.0–9.15.0.0.0. At about 9.15.0.0.0 the orthographic distinction also disappears in the Usumacinta Valley and also at Copan and Quirigua. The process does not incorporate Palenque, where even the latest texts such as the Tablet of the 96 Glyphs from 9.17.13.0.0 continue to distinguish between velar and glottal spirants. In the context of the *u b'aah* 'the image of' phrase, final *h* is first replaced by *j* on Naranjo Stela 21 (9.13.15.0.0). Other early T757-*ji* spellings are found at Pusilha (Stela M, 9.14.0.0.0) and in the Usumacinta Valley (Yaxchilan Stela 35, 9.15.10.0.1; El Chorro Altar 2, 9.16.0.0.0) (Figure 4.18a). A similar collapse of the distinction can be shown in regard to the common **CH'AAJ** root in the "hand-scattering" verb. On El Chorro Altar 4 (9.17.0.0.0), **hi**

54. There is at least another obvious error in Gaspar Antonio Chi's spelling examples. His spelling of the hieroglyph for the month Ch'en includes *i-ki* for *ik'* 'black' where he ignored the glottalization of the final consonant.

invades in a position that formerly, and quite rigidly, pertained to **ji**. On Caracol Altar 12 (9.18.10.0.0) the compound in the scattering glyph otherwise spelled **CH'AAJ-ji** is spelled **CH'AAJ/ch'a-ha**, now displaying signs not only of a lost *j : h* contrast but also of the loss of vowel length (Figure 4.18b).

Other aberrant Late and Terminal Classic spellings confirm the eastern lowlands as the origins of this process and include **tu-HOUSE-ja** (instead of *naah* 'house') on Copan Temple 11, **HOUSE-ji** and **si-ji** (instead of *sih* 'give, gift') on Itzan Stela 17, **SACRED-ju-lu** (instead of *k'uhul*) on the Reviewing Stand from Copan, and **SAK-b'a-ka na-ja cha-pa-ta** (instead of **SAK-ba-ki na-hi cha-pa-tu** 'white bone house centipede') on K1256 (Kerr 1989–2000). On the Terminal Classic Stela 17 from Caracol the word *k'uhul* is spelled with the term for 'spear', *jul* in proto-Ch'olan (Kaufman and Norman 1984:122), along with a syllabic **lu**. In the context of the *u b'aah u juntan* '... is the person of the care-taken one' phrase, the **HU'UN** knot replaces the number one (**JUN**) in two Terminal Classic texts: the Walter Randel Stela of unknown provenance (Mayer 1980: cat. no. 43, plate 61) and on a bone from Burial 49 at Topoxte (Teufel 2000: fig. 107). Interestingly, the east-west movement corresponds strongly to the development of long vowels out of glottalized vowels after ca. A.D. 725, as observed by Lacadena and Wichmann (this volume). Also, the loss of vowel length distinction is first attested in the eastern Peten, the Pasi6n and Belize (Lacadena and Wichmann 2000).

The *h : j* distinction apparently was never completely lost in the hieroglyphic language. It was maintained in Yucatan when it had already disappeared in large parts of the eastern lowlands. The lintel of the Akab Dzib of Chichen Itza even preserves the **-hi** suffix in word-final context in the case of the word for house, *naah*. Also, the *ha'i* demonstrative is frequently used and always spelled with a variant of the **ha** sign at Chichen Itza.⁵⁵ Late inscriptions in Yucatan also preserve the **hi** sign in the context of *u-baah* 'image' phrases long after the southern lowlands introduced **ji** syllables in this context. This seems to be well in accordance with the observation that both phonemes were distinguished in Yucatec until late in the second half of the nineteenth century.

The Dresden Codex as one of the last documents of Maya hieroglyphic writing still presents evidence for the *j : h* contrast, although only one of the signs for the glottal spirant has survived. In the Dresden Codex, the word for 'road' is rendered with a compound **b'i-hi**. The last sign of this compound seems to be Thompson's T186, a late variant of the T60 **hi** knot (D. 41c, 65b). Another word that preserved a glottal spirant in word-final position in the Dresden Codex is the word for house, *naah* (D. 8c, 33c). It is written with the same codical version of the **hi** suffix. Although at least one sign for the glottal spirants has been used by the scribes of the Dresden Codex, other spellings show a loss of distinction between the glottal and the velar spirants. Two further examples for the use of velar spirants instead of the glottals are to be found in the name of the Moon Goddess **ju-IXIK** (instead of *uh ixik*, 'Lady Moon') and **ju-WAAJ-wa** (instead of *huj waaj*, 'iguana bread'). However, the text corpus in the codices is too small and semantically restricted to provide enough examples for the phonemic contrast between the glottal and

55. This variant occurs on all lintels from the Monjas and is based on the "percentage" sign, which in the full, classic form of the "knot-skull" compound is infixed into the skull. In some examples the cartouche with the percentage sign seems to be reduplicated for reasons of space.

velar spirants. It is possible, though, that at least in a few contexts the word-final glottal spirant was still distinguished and marked.

The fact that in the codices the *j* : *h* distinction is not consequently realized eventually also points to the linguistic environment in which the codices were written. The old idea that the codices were produced by speakers of Yucatec Maya has been refuted by more recent work, which sees a strong Ch'olan impact on the language of the codices (Wald 1994b; Bricker 2000; Vail 2000a). The spelling violations observed in regard to the *j* : *h* distinction now add another argument against an exclusive Yucatec background. Had the scribes been speakers of Yucatec, they would still have distinguished between the two phonemes. Yucatec Maya marked the distinction between the velar and laryngeal spirants at least until the middle of the nineteenth century. The "Proclama de Juan de la Cruz," a document written by the revolting Maya of the Eastern Yucatan Peninsula in 1850, consequently uses *h* in such contexts where a velar spirant can be reconstructed, while no orthographic sign stands for the glottal spirant (*in yamail*, 'my beloved one') (Bricker, personal communication, May 2001).

The discovery of an orthographic distinction between glottal and velar spirants not only forces us to expand our syllabic tables to include another consonant but it also provides us with an important tool for future decipherments and linguistic reconstruction. The loss of the *j* : *h* distinction probably did not happen at all sites where Maya writing was used. In the northern area and probably also in the westernmost lowlands, the distinction between glottal and velar spirants was maintained until the Terminal Classic period. In the eastern Peten, in Belize, and probably also at Copan, the distinction began to disappear from the written record after approximately A.D. 700. At the end of this process, all Ch'olan languages had replaced *h* in those contexts where proto-Mayan had **j*.

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FIVE

Disharmony in Maya Hieroglyphic Writing

Linguistic Change and Continuity in Classic Society

STEPHEN HOUSTON

Brigham Young University

DAVID STUART

Peabody Museum, Harvard University

JOHN ROBERTSON

Brigham Young University

Some forty-five years ago Yuri Knorozov discovered the existence of phonetic syllables in Maya writing (1952, 1958, 1965, 1967a). Despite strong opposition, Knorozov made an excellent case that Maya script recorded signs of consonant + vowel form. When combined in groupings of two or more glyphs these signs spelled words like **ma** + **ma** → *mam* or **ku** + **tzu** → *kutz*. In each instance the final vowel of the second syllable—a superfluous, “dead” vowel—could be safely detached once the two syllables were joined into a CVC (or CVCVC) root, the most common configuration in Mayan languages. Knorozov’s insight has been discussed elsewhere, either as an issue in intellectual history (Houston 1988; Coe 1992) or as a topic in decipherment (Justeson and Campbell, eds., 1984). Today, few epigraphers question the singular importance of Knorozov’s contribution. Working in near-total isolation from other Mayanists, he succeeded in achieving a breakthrough that fundamentally changed modern views of Maya writing.

Yet Knorozov could not explain one feature of syllabic signs: What, precisely, determined the final sign in such groupings? Knorozov detected a default arrangement, which he labeled “synharmony,” by which the vowel of the second sign duplicated that of the first (Knorozov 1965: 174–75). As Kelley pointed out, this pattern explained a large number of spellings (Kelley 1976: 18). Lounsbury, too, found that synharmony accorded with morphophonemic processes in Mayan languages (1973: 100), especially the “echo” syllable, a “voiceless . . . repeat of the root-final consonant and vowel” (Hopkins 1988: 2). But, to a puzzling extent, the “rule” did not operate “systematically” (Knorozov 1965: 183). Some of Knorozov’s most convincing decipherments (e.g., **mu** + **ti** → *mut*, ‘bird’) blatantly violated the expectation of shared vowels. For epigraphers this was a crucial

point, since the premise of synharmony had facilitated the decipherment of second syllables with unknown vowels (Kelley 1976: 246). The unexplained “disharmony”—which we define as the presence of vocalic discordance in syllabic spellings—remained a source of concern to Knorozov’s followers and a point of weakness to be exploited by his detractors.

So far, attempts to explain disharmony have proved somewhat tentative. Kelley hypothesized a possible relation to “presumed cognates in the Penutian languages, which happened to have a tendency to CVCV roots (Kelley 1976: 180). The silent vowel reflected some earlier root form that typically ended in vowels (Kelley 1976: 167), a line of reasoning building on Whorf’s supposed, and highly dubious, linkage of Mayan to Penutian languages (Campbell 1979: 964). Unfortunately, neither the Penutian-Mayan connection nor the existence of such roots can be reconstructed in a persuasive manner. Justeson proposed another argument for the “fictitious V,” suggesting that “[s]pecial phonological and grammatical conditions appear to have affected vowel selection in regular ways” (Justeson 1989: 35). Syllable-closing consonants had predictable associations with disharmonic selection, so that, for example, “when a dental or alveolar stop . . . or alveolar affricate . . . followed *o* or *u* the vowel was normally *i*” (Justeson 1989: 35). Knorozov’s *mut* spelling illustrated this nicely. Bricker discerned a different pattern. In her opinion medial vowels of logographs correlated with complements containing “neutral vowels” (Bricker 1986: 7; see also Justeson 1978: 291). These vowels could be used flexibly with logographs containing different vowels.

As an alternative explanation Justeson highlighted possible grammatical reasons for disharmony. Spellings of transitive and intransitive verbs favored different vowels in closing syllables. On occasion, such syllables may have recorded the “initial vowel of the suffix” (Justeson 1989: 35). In unpublished work, Houston and Stuart independently considered such an explanation for a spelling of ‘his/her/its bone’ as U-b’a-ki → *u-b’ak-i**l**, with the word-final *-l* implicit in the *ki* syllable. (We no longer advocate this interpretation.) Similarly, Hopkins observed that final, silent vowels in syllabic spellings should be explained before they are ignored (1988: 2). He too hypothesized that the “echo vowel” of certain consonants determined the selection of spelling-final syllables (Hopkins 1988: 2).

While plausible, these explanations have yet to gain wide acceptance, nor have they effectively explained all occurrences of disharmony (e.g., Justeson 1989: 35). We propose another view, (1) that synharmonic spellings yield CVC or, more rarely, CVCVC roots, and (2) that disharmony marks additional, medial elements within roots: CVVC (which preserved Common Mayan *CVVC or *CV’C > CVVC) or CVhC (which preserved Common Mayan *CVhC). To put this another way, disharmony registers what we call “complex vowels”: those with vowel length, a feature formerly thought to have been ignored in Maya script (Justeson 1989: 33), or vowel plus *h*. Disharmony provides an important clue to the history of Mayan languages. It enlarges the number of vowels attested in Classic Maya times (cf. Kaufman and Norman 1984: 85) and reflects conservative elements in the language that were recorded hieroglyphically. We concur with Hopkins that orthographic variation is more likely to reveal, not so much arbitrary caprice on the part of scribes, as but unsuspected subtleties of ancient language.

Presentation of Data

Our approach involves several steps and methodological assumptions. First, we have gathered as many disharmonic spellings as possible, or at least those that have come to our attention through a thorough search of the corpus of Maya texts. Second, these data have been compared to lexical reconstructions by Kaufman and Norman (1984). In this paper Robertson supplies evidence for these reconstructions, information that tends to be absent in Kaufman and Norman's list (1984). We believe it is not enough to assert a particular reconstruction; rather, one must show explicitly why one form is more likely than another. Some terms, though present in script, could not be studied for want of comparative data from attested Mayan languages. For example, the INTRANSITIVE POSITIONAL ending, *-wan* (*-wani* or *-waan* in glyphs), is attestable only in those languages where all vestiges of Common Mayan vowel length have been lost. For such morphemes we despair of confirming vowel length outside the script. Moreover, we have eliminated words with morphological suffixes because such stems could not be plumbed for evidence of root quality. Disharmony can only affect the final vocalic element in glyphic spellings; suffixed roots effectively obliterate such evidence (although see note 60). Another problem is that some signs possess phonetically transparent readings yet utterly elude interpretation of their meaning. For example, *u-si*, a term recently revealed in the Bonampak murals by means of infrared imaging, may spell the word for "mosquito," but we have no textual confirmation that this meaning was intended by the Maya.

A note on the search for cognates: We have scavenged broadly to diminish any possible ambiguity. Prior experience tells us that stray examples can fatally mislead the researcher who ignores the vagaries of linguistic history. A case in point is glyphic **b'a-ki** 'bone', which, according to our hypothesis, indicates *b'aak* or *b'ahk*, forms that automatically presuppose Common Mayan **b'aaq*/**b'a'q* or **b'ahk*, respectively (CM **q* turns to *k* in the language of the Classic inscriptions). But the comparative data must be investigated carefully before this descent can be assumed. Consider the following. Cunén K'iche' preserves Common Mayan long vowels, but it is misleading to cite Cunén K'iche' VV as a reflex of Common Mayan **VV*, since the modern VV came not only from Common Mayan **VV*, but also from **V'* and **Vh*. To establish that a given VV in Cunén is a true reflex of **VV*, and not of **V'* or of **Vh*, a cognate form must be retrieved from languages that preserve both **V'* and **Vh*. Mam fulfills this goal by preserving **V'* (cf. *k'i'š* < CM **k'i'š*), a feature showing that *baaq* cannot derive from **ba'q*, since CV' is conserved in Mam. Yet, this still leaves the possibility of **b'aaq* or **b'ahq*, since Common Mayan **CVhC* and **CVVC* both became CVVC in Mam. By citing Ch'orti' *bak*, we eliminate the possibility of Common Mayan **b'ahq* leading to *b'aaq*, since Ch'orti' preserves Common Mayan **Vh*, as, for example, *k'ahk'* < CM **q'ahq'*, 'fire'. Finally, we can confirm the reconstruction by mentioning Yukatek *baak*. Yukatek preserves **Vh*, which becomes VV (*k'áak* 'fire' < CM **q'ahq'*) and V'C in Yukatek *k'i'š* < CM **k'i'š*. (Hiroyonous 1982, for laryngeal *h* causing high tone in Yukatek Maya). Triangulation, then, helps establish Common Mayan **b'aaq*. This proves that glyphic **b'a-ki**, *b'aak*, accurately reflects its ancestor. (See below for a full elaboration of vocalic history in the Mayan languages, particularly as this development applies to Classic Ch'olti'an.)

A third step is our insistence that reconstructible vowel length and other root qualities

be checked with *synharmonic* spellings, since this comparison supplies a necessary control for testing our hypothesis. Presumably, should our proposal be correct, the overwhelming number of synharmonic spellings would bear evidence of short vowels and unembellished CVC roots in earlier, reconstructible forms. (Such contrasts are especially striking for terms that we had previously regarded as homophones, such as **pa-ta**, *pat*, ‘form, acquire shape’, and **pa-ti**, *paat*, ‘back’.) Finally, as subsequent discussions will hopefully show, we believe it useful to consider script chronology, especially in examples where disharmonic spellings of known lexemes shifted to synharmonic ones. Our principal concern has been with texts of the Classic period, which vastly outnumber the four Postclassic codices. These texts have the added advantage, not shared with the codices, of being datable (in general) and more firmly fixed in provenience (excepting looted pieces). They also record a sample that is vastly larger than our inventory of codical lexemes.

The following tabulation records disharmonic spellings by frequency, beginning with spellings ending in **-i** (by far the most common) and continuing through **-a** and the more ambiguous examples of **-u**. Interspersed in alternating lists are synharmonic spellings employing the same ending vowel. Order within these classes is alphabetic. We also furnish the number of examples in which certain vowels are combined in CV + CV conjunctures, so that there are, to our knowledge, 26 examples of **Ca + Ci** syllables. Most of these spellings are common in Maya script; when rare, their provenience or place of publication is indicated within parentheses. Note that, with a few exceptions (e.g., **TUUN-ni** on Tikal Stela 8, at 9.3.2.0.0, Justeson and Mathews 1983: 590), most date to the Late Classic period, especially after 9.11.0.0.0, when fully syllabic or phonetically complemented spellings became more common (Grube 1994: 179, fig. 2). Conventions save space: CM means Common Mayan, a language reconstructible from Mayan daughter languages (Robertson 1992: 4–5), WM = Western Mayan, LL = Lowland Language, TZ = Tzeltalan, GTz = Greater Tzeltalan, PCh = proto-Ch’olan, CH = Ch’ol, CHR = Ch’orti’, YUK = Yukatek Maya, MO = Mochó, CU = Cunén K’iche’, POQ = Poqomchi’, TOJ = Tojolabal.⁵⁶ The reconstructions are Kaufman and Norman’s (1984) unless otherwise marked.

GROUP I

*Disharmonic Spellings Ending in -i*⁵⁷

Sample: **Ca + Ci** = 26; **Cu + Ci** = 7; **Co + Ci** = 4

AAT-ti, *aat*, ‘penis’ (CM: **aaty*; MO: *aat*)

b’a-ki, *b’aak*, ‘bone’ (CM: **b’aaq*; YUK: *b’aak*; CH: *b’ak*; CU: *b’aaq*; Mam: *b’aaq*; MO: *b’aaq*; POQ: *b’aaq*; TOJ: *b’ak*)

56. Our linguistic data come from the following sources. Mochó: Kaufman (1967); Yukatek: Blair (1997); Ch’ol: Aulie and Aulie (1978); Mam: John S. Robertson, field notes; Cunén K’iche’: Robertson and Canto Rodríguez (1992); Poqomchi’: John S. Robertson, field notes; Huastec: Barbara Edmonson, personal communication, 1991; Tojolabal: John S. Robertson, field notes; Tektitek: John S. Robertson, field notes; Ch’orti’: Wisdom (1940.)

57. In the initial version of this paper we made the argument that the CVC intransitives, which almost universally ended in *-i*, were all long. We no longer believe this. A more reasonable assumption would be that it came from Common Mayan **-ik*, an ending that signaled predicates of a single argument.

- cha-chi**, *chahch?*, ‘basket’ (Kerr 2914; YUK: *cháachab?* [colander, sieve]?)
- cha-ki/CHAAK-ki**, *chahk*, ‘rain god’ (YUK: *cháak* [rains, verb], CH: *chajk* [thunder]⁵⁸)
- ch’a-ji**, *ch’aaj*, ‘smoke, incense’
- CHAN-na-ni**, *chan-aan*, ? (Quirigua Stela I)
- ch’a-ti**, *ch’aat*, ‘dwarf’ (Yaxchilan HS. 2, VII:W1)
- HAAB’-b’i**, *haab*, ‘year’ (Naranjo HS. 1, Nimli Punit St. 14 [CM: **ha’b*’]; YUK: *ha’ab*’;
CU: *jnaab*’ [jun aab’]; MO: *hab’il* [año], *juun-a’b’-eeh* ‘last year’; TOJ: *ha’b’-il*)
- i-ka-tzi**, *ikaatz*, ‘bundle, cargo, burden’
- i-tz’a-ti**, *itz’aat*, ‘wise man’
- ja-yi**, *jaay*, ‘thin?’ (CM: **jaay*, note that we believe the Classic Maya distinguished orthographically between *h* and *j*; YUK: *jaay*; CU: *jaar*, [intransitive verb, ‘wear out’]; CH: *jay*)
- ju-chi**, *juuch*, ‘shell’
- ju-bi**, *juub*, ‘conch, trumpet’
- yi-cha-ni**, *y-ichaan*, ‘his mother’s brother’ (Yaxchilan L. 58:C1; CM: **ikaan*; Wastek: *itzaam*; CH: *ichan*)
- yi-ch’a-ki**, *y-ich’aak*, ‘his paw’ (CM: **ix-k’aq* [reconstruction by John Robertson]; YUK: *üich’ak*; CU: *ixk’yaq*; Mam: ⁵⁹ *Šky’aq-b’aj*, *Šky’aq*; MO: *isk’aq*)
- MAAN-ni**, *maan*, part of Emblem Glyph, possibly La Florida (Yaxchilan L. 45:C4)
- ma-xi**, *maax* (CM: **ma’x*; Mam: *Šmaax*; CH: *max*)
- mi-ya-tzi**, *miyaatz*, ‘wise man’ (unprovenanced pot, Robicsek and Hales 1981: 100)
- mu-ku-yi**, *mukuuy*, ‘dove’ (Coe 1973: 85, U1 [presumed descendant of **muukuur*]; MO: *muukuu*’)
- mu-ti**, *muut*, ‘bird’ (WM: **muut*; CH: *mut*; CHR: *mut*)
- mu-wa-ni**, *muwaan*, ‘bird’ (possibly from **mu-way-aan*, ‘shadow-sleep’, Joseph Fullmer, personal communication, 1996)
- na-b’i**, *nahb’?*, ‘pool’ (CM: **nahb*’; YUC: *náab*’; CH: *ñajb*’)
- na-hi**, *naah* ‘house’ (CM: **naah*; YUK: *naj* ‘house’ *a naajila* ‘your house’; CU: *jaaj*; MO: *naah*; Mam: *jaa*)
- na-li**, *naal*, ‘native?’ (Dos Pilas HS 4, Step III:E1)
- OOK-ki**, *ook*, ‘foot’ (CM: **ooq*; YUK: *ook*; MO: *ooq*)
- OTOOT-ti**, *otoot*, ‘home’ (CM: **-atyooty*; rendered graphically as **ya-ATOOT-ti** at Río Azul in the late Early Classic period, as at Oxkintok; YUK: *-otoch*; K’iche’: *-achooch*)
- pa-chi**, *pahch*, ‘trap?’ (CHR: *pahch*)
- pa-ti**, *paat*, ‘back’ (CM: **paaty*; CH: *pat*; YUK: *paach*)
- pa-xi**, *paax*, month name
- su-tz’i**, *suutz*, ‘bat’ (CM: **so’tz*’; CH: *sutz*’; San Fransisco [YUK]: *sootz* [so’otz’]; CU: *sootz*’; Tektitek: *sootz*’; MO: *sootz*’)
- ta-ji**, *taaj*, ‘obsidian’ (Copan Mon. 60:A3; see Justeson 1982: 6, CM: **tyaah*, and proto-Quichean **chaah*; n.b.: the attestation at Copan is late, at which time the *jilhi* distinction may have been lost)

58. This probably comes from **kaahq*, which is the nineteenth day name in the twenty-day cycle (Robertson 1984: 372).

59. We will use *š* to signal the Mamean retroflexed, alveopalatal, strident fricative.

TUUN-ni, *tu-ni*, *tuun*, ‘stone’ (CM: **toon*; YUK: *tuunich*; MO: *toon*)
 U-si, *uus*, ‘mosquito?’ (but note CM: **us*, although Mixe-Zoquean **uus*; lexical context highly uncertain)
 wa-WAAJ-ji, *waaj*, ‘tamale’ (WM: **waaj*; YUC: *waaj*; CH: *waj*)
 wo-hi, *wooh*, *wooj*?, month name
 xo-ki, *xook*, ‘shark’?/‘count’?
 ya-AJAW-MAAN?-ni, *y-ajaw-maan*?, ? (new Calakmul fragment)

Synharmonic Spellings Ending in -i

b’i-xi, *b’ix*, ‘go away’ (Ch’olti’: *uix*)
 chi-ji, *chij*, ‘deer’ (CM: **keehj*; CU: *kyeej*; Mam: *cheej*)
 K’IN-ni, *k’iin*, ‘day, sun’ (CM: **q’iin*; PCh: **k’in*; TZ: **k’in*; YUK: *k’iin*; CU: *q’iij*)
 K’IN-ni-chi, *k’in-ich*, ‘sun-faced’
 ni-chi, *nich*, ‘flower’ (PCh: **nich*; CH: *nichim*; Ch’orti’: *nich*)
 pi-ki, *pik*, numeral classifier, units of 8,000
 pi-si, *pis*, numeral classifier
 pi-tzi, *pitz*, ‘play ball’
 ti-li, *tihl*, ‘tapir’ (CM: **tixl*; PCh: **tihl*)
 ti-si, *tis*, ‘flatulence’ (K4692, Kerr 1989–2000, A5; PCh: **tis*; CHR: *tis*)
 tz’i-b’i, *tz’ihb*, ‘writing, paint’ (CM: **tz’ihb*; PCh: **tz’ihb*; MO: *tz’ihb*; YUC: *tz’iib*)⁶⁰
 wi-ni-ki, *winik*, ‘man’ (CM: **winaq*; PCh: **winik*; CU: *winaq*)
 wi-tzi, *witz*, ‘hill’ (CM: **witz*; YUC: *witz*; Mam: *witz*)
 yi-chi, *y-ich*, ?

GROUP II

Disharmonic Spellings Ending in -a

Sample: Ci + Ca = 5; Co + Ca = 6; Cu + Ca = 4; Ce + Ca = 3

AYIIN-na, *ahyiin*, ‘cayman’ (CM: **ahyiin* [reconstruction by Robertson]; YUK: *áayin* [Blair (1997)])
 b’u-la, *b’u’l*, ‘bean’ (LL: **b’u’ul*; CH: *b’u’ul*; Ch’orti’: *b’u’r*; YUK: *b’u’ul* [borrowed word])
 CH’EEN-na, *ch’een* ‘cave, rock outcrop’ (CM: **k’e’n*; YUK: *ch’e’en*)
 ha-o-b’a, *ha’-oob*, deictic with plural suffix (see YUK: -o’ob’, perhaps a diffused LL word)
 hu-na, *huun*, ‘book’ (CM: **hun*; YUK: *ju’un*; Mam: *u’j*; CH: *jun*)
 yi-tz’i-na, *y-ihzt’iin*, ‘his younger brother’ (CM: **ihzt’iin*; Mam: *itz’iin-baj*; YUK: *úitz’in*)

60. The harmonic spelling *tz’i-b’i* seems to present a difficulty, since it records something that would have been pronounced *tz’ihb*. However, both simple and complex vowels occur under harmonic spellings (see below); only disharmonic spellings are totally regular. When disharmony does occur with the word for ‘to write’, however, it is highly consistent: U-tz’i-b’i, but almost always U-tz’i-b’a-IL, with the IL being, in our view, a morphosyllabic sign. Morphosyllables do not signal vowel complexity.

ka-se?-wa, *kaseew*, month name
ke-le-ma, *keleem*, ‘youth’ (WM: **keleem*; YUK: *táankelem*; MO: *keleem* ‘gallo,’ *kereem* ‘muchacho’)
ki-ta, *kiit*, ?
ko-ko-ma, *kokoom*, Yucatecan family name (Chichen Itza) (YUK: *kokoom* [family name, Robert Blair (1997)])
K’AWIIL-la, *k’awiil*, deity name
k’u-ti-ma, *k’utiim*, name connected with El Cayo
-Co-ma, agentive *-oom* (CM: **-oom*; CU: *elq’oom* [robber], *ki-b’anoom* [they have done it]; MO: *elq’oom*)
SIHOOM-ma, *sihoom*, ‘flower’
to-k’a, *took*, ‘flint’ (LL: **took*; CH: *tok*; CHR: *tok* ‘a chipping from flint’)
u-to-ma, *ut-oom*, ‘will happen’⁶¹
tu-pa, *tuup*, ‘earspool’ (YUK: *tuup* [Blair (1997)])
yu-ha, *y-uuh*, ‘his necklace’ (CM: **uuh*; CU: *uw*; Mam: *uuw-aj*, *-uuw*; MO: *uuh*)

Synharmonic Spellings Ending in -a

a-ja-wa/AJAW-wa, *ajaaw*, ‘lord’ (CM: **aajaaw*; TZ: **äjäw*; CH: *ajaw*)
a-k’a-b’a, *ahk’ab*, ‘night’ (Palenque Throne Back, CM: **ahq’ab*; PCh: **ahk’äb*; YUK: *áak’ab*; Ch’orti: *ahk’ap*; CU: *chaq’ab*)
b’a-la-ma, *b’ahlam*, ‘jaguar’ (CM: **b’ahlam*; PCh: **b’ahläm*; n.b. Alfonso Lacadena suggests to us that the /h/, while unrecorded, needs to be included from the evidence of comparative Mayan linguistics, e-mail communication, 1999)
CHAN-na, *chaan*, ‘snake’ (CM: **kaan*; TZ: **chan*; PCh: **chan* [see also terms for ‘four’ and ‘sky,’ both with loss of long vowel]; YUK: *kaan* but CH: *chen* [‘small living animals’ < snake])
ch’a-b’a, *ch’ab*, ‘penance?’ (CH: *ch’eb’tesan* ‘consolar’)
CH’AM-ma, *ch’am*, ‘take, receive’ (CM: **k’am*; PCh: **ch’äm* [n.b.: by citing Kaufman’s reconstruction, we do not intend to voice agreement with his hypothesis of a six-vowel system in proto-Ch’olan; this paper instead endorses a ten-vowel system where *oo* and *ee* are weakly represented]; YUK: *k’am*; CU: *k’am*; CH: *ch’em*)
KAB’-b’a, *kab*, ‘earth’ (CM: **kab* - *kaab*)
ka-cha, *kach*, ‘knot, tie’ (Copan Temple 18; PCh: **käch*; CH: *käch*)
ka-ka-wa, *kakaw*, ‘cacao’ (PCh: **käkäw*; CH: *käkäw*)
k’a-b’a, *k’ab*, ‘hand, arm’ (CM: *q’ab*; YUK: *k’ab*; CH: *k’äb*; CU: *q’ab*)
k’a-b’a-a, *k’ab’a*, ‘name’ (LL: **k’aab’aa*; PCh: **k’ab’a*; CH: *k’ab’a*)
K’AK’-k’a, *k’ahk*, ‘fire’ (CM: **q’ahq*; PCh: **k’ahk*; CH: *k’ajk*; YUK: *káak*; Mam: *q’aaq*)

61. The ‘futuro en ruz’ *-oom* ending is puzzling, since it can be attested only in Yukatekan languages, yet certainly formed an important component of Classic Ch’olti’an, an Eastern Cholan language (Houston et al. 2000). Nonetheless, *-om* (*-um* if the root vowel is *u*) does occur in colonial Q’eq’chi’ as an imperative/optative, as does *-m* in Mam. It is not uncommon for optative markers to become future markers in Mayan languages (Robertson 1992: 67ff). We do not yet have any convincing explanation of its long vowel, which also marks the agentive *-oom*. It is possible that the agentive has a verbal origin, as in *kay-oom*, ‘he has to fish (fisherman)’.

- K'AN-na, *k'an*, 'yellow' (CM: **q'an*; PCh: **k'än*; CH: *k'en*; CU: *q'an*; Mam: *q'an*; YUK: *k'aank'an*)
- la-ka, *lak*, 'plate' (CM: **laq*; CU: *laq*; Mam: *laq*)
- la-ka-ma, *lakam*, 'big, banner'
- la-ta, *lat*, suffix to elapsed time periods
- MAK-ka, *mak*, month name
- na-b'a, *nab'*, 'hand measure' (PCh: **näb'* as in **näb'=te*, 'staff')
- NAL-la/na-la, *nal*, 'mazorca' (CM: **ηal*; PCh: **näl*; Mam: *jal*; CU: *jal*)
- pa-ka, *pak*, 'face down, bend over' (CM: **paq*; CH: *päk-äl*)
- pa-ka-la, *pak*, 'shield' (linked to preceding entry, since Classic Maya shields were flexible objects)
- pa-ta, *pat*, 'acquire shape' (CM: **pat*; PCh: **pät*; CH: *pät*)
- SAK-ka, *sak*, 'white' (in month name at Naj Tunich, CM: **saq*; CH: *säk-*; Mam: *saq*; CU: *saq*; YUK: *sak*)
- ta-ja, *taj*, 'pine' (CM: **tyaj*; CH: *taj*; CU: *chaj*; Mam: *tzaj*)
- ta-la, *tal*, ordinal suffix
- TAN-na, *tahn* 'within, chest' (LL, GTz: **tahn*; CH: *tajn*)
- to-ka-la, *tookal*, 'cloud' (CM: **tyooq(-al)*; PCh: **tokal*; CH: *tokal*)
- tz'a-ka, *tz'ak*, 'whole, complete' (CM: **tz'aq*; CH: *tz'äkäl*)
- wa-ya, *way*, 'sleep, companion spirit' (CM: **war*; PCh: **way*; CH: *wäy*; CU: *war*)
- ya-la, *y-aal*, 'child of mother' (CM: **aal*; PCh: **al*; Mam: *-aal*; CU: *aal*)

GROUP III

Disharmonic Spellings Ending in -u

Sample: Ca + Cu = 5; Ce + Cu = 3; Ci + Cu = 1

- a-ku, *ahk*, 'turtle' (PCh: **ahk*; YUC: *áak*; CH: *ajk*)
- a-nu, *aan*, ? (connected to deity impersonation)
- b'a-tz'u, *b'aatz'*, 'howler monkey' (CM: **b'a'tz'*; CU: *b'aatz'*; Chuj: *b'a'atz* [day name, Judy Maxwell, personal communication, 1990])
- CHAAN/KAAN-nu, *chaan*, 'master' (Alfonso Lacadena, personal communication, 1998, although he prefers a glottal in place of length.)
- che-b'u, *chehb'*, 'brush' (also spelled **che-e-b'u** *che'eeb'*) on unprovenanced pot; CH: *chejb'* [bamboo]; YUK [San Francisco]: *cheb'*)
- chi-ku, *chihk*, 'coati'
- e-b'u, *ehb'*, 'stairway' (CM: **ehb*)
- ma-su, *maas*, reference to dwarf
- te-mu, *teem*, 'throne' (K1524, Kerr 1989–2000, San José, Belize, Room B, C4; CM: **teem*)

Synharmonic Spellings Ending in -u

- b'u-ku, *b'uhk*, 'clothes' (CM: **b'uhq* - *b'u'q*; Chortí: *p'uhk*; CH: *bujk-el*; again, Lacadena recommends inclusion of the /h/ in the spelled form)

b'u-t'u, *b'ut*, 'bury' (YUK: *b'ut* 'cover nose' [Blair (1997)])
chu-ku, *chuk*, 'seize' (PCh: **chuk*; YUK: *chuk*; CH: *chuk*)
CHUM-mu, *chum*, 'seated' (LL: **kyum*)
JUL-lu, *jul*, 'shoot arrow, spear' (GTz: **jul*; Ch'orti': *huruk*)
k'u-k'u, *k'uuk*, 'quetzal' (CM: **q'u'q*; CH: *xmank'uk*)
ku-chu, *kuch*, 'burden, load' (YUK: *kuch* [Robert Blair])
ku-nu, *kun*, 'oven'?
ku-yu, *kuy*, 'owl'
mu-ku, *muk*, 'bury' (El Cayo Panel 1:C13; CM: **muq*; YUK: *muk*; CU: *muq*; Mam: *muq*)
su-ju-yu, *sujuy*, 'pure' (Xcalumkin) (YUC: *suhuy* [Blair (1997)])
tu-ku, *tuk*, 'pile in groups of 20?' (common at Tonina)
tzu-tzu, *tzutz*, 'end, finish'
t'u-lu, *t'uhl*, 'rabbit' (PCh: **tuhl*; YUK: *t'u'ul*; Ch'orti': *t'ur*; CH: *t'ujr*)
tz'u-nu-nu, *tz'unuun*, 'hummingbird' (CM: **tzuunu'n*; PCh: **tz'unun*; YUK: *tz'unu'un*;
Mam: *tz'uu'nin*; CU: *tz'uunun*)
u-b'u-TE, *ub'-te*, 'tribute cloth' (Piedras Negras St. 14, secondary text)
u-lu, *uul*, 'atole' (CM: **uul*)
yu-mu, *yuum*, 'boss' (Río Azul 'chocolate vessel'; LL: **yuum*; PCh: **yum*; YUK: *yuum*)

Not all evidence, however, conforms smoothly to these patterns. Violations of disharmony—instances where expected disharmonic spellings appear in *synharmonic* form—occur in a number of inscriptions, listed here with their dates and locations. Later we suggest that these violations are, in a sense, the exceptions that prove the rule.

?	a-ka-OK-KIMI , <i>ak ok kimi</i> , 'turtle foot, Tonina stucco ornament death god'	
?	pa-xa , <i>pax</i> , month name (elsewhere pa-xi , <i>paax</i>)	Naj Tunich, Drawing 66
?	yi-tz'i-ni , <i>y-itz'in</i> , 'his younger brother'	Naj Tunich, Drawing 29
9.15.15.12.16	-wa-ni-yi , <i>-wan-i</i> , POSITIONAL	Copan Temple 11, East Doorway, North Panel: C3
9.16.10.5.2	AH-b'a-ka , <i>a-b'ak</i> , 'he of the captive'	Naj Tunich, Drawing 24:B2
9.16.12.5.17	-AT-ta , <i>at</i> , 'penis'/God name	Copan Temple 11, North Doorway, East Panel: C4
9.17.0.0.0	-AT-ta , <i>at</i> , 'penis'/God name	Copan Temple 11, Reviewing Stand: D'1
9.17.0.0.16	ha-o-bo , <i>ha'-ob</i> , deictic with plural suffix?	Copan Temple 11, West Door, South Panel: A4
9.17.2.0.4	ya-AJAW-MAN?-na , <i>y-ajaw-man</i> , ?	Cancuen, new panel: D5
9.17.2.11.16	yo-ko , <i>y-ok</i> , 'foot'	Copan Temple 11, East Doorway, South Panel: A2
9.17.4.10.18	-AT-ta , <i>at</i> , 'penis'/God name	La Entrada, stone vessel: Q1
9.18.8.3.9	MUWAN-na , <i>muwan</i> , month name	Caracol BM. 3: D3
9.18.10.0.0	b'a-ka , <i>b'ak</i> , 'captive'	Caracol Alt. 23: C3
9.18.10.0.0	K'AWIL-li , <i>k'awil</i> , deity name	Caracol Alt. 23: C1, B6

9.18.10.0.0	K'AWIL-li, <i>k'awil</i> , deity name	Naranjo St. 11: B5
9.18.10.0.0	K'AWIL-li, <i>k'awil</i> , deity name	Naranjo St. 8: B6
9.18.10.0.0	SIHOM-mo, <i>sihom</i> , 'flower'	Ixkun St. 5: J1
9.19.0.3.0	K'AWIL-li, <i>k'awil</i> , deity name	Naranjo St. 10: A3 (but (note that same monument has K'AWIL-la spelling, at A11)
9.19.10.0.0	K'AWIL-li, <i>k'awil</i> , deity name	Naranjo St. 32: P2, Q4, U3, W9
9.19.10.0.0	ch'a-ha, <i>ch'ab</i> , 'incense, smoke'	Caracol Alt. 12: H3
10.0.0.0.0	u-to-mo, <i>ut-om</i> , 'it will have happened'	Caracol Alt. 13: W3
10.1.0.0.0	ch'a-ja, <i>ch'ab?</i> , 'incense, smoke'	Caracol St. 17: C5 (the <i>jalha</i> (distinction appears to have disappeared at this time)
10.1.0.0.0	K'AWIL-li, <i>k'awil</i> , deity name	Seibal St. 10: A8

The spellings from Temple 11, Copan, are especially noteworthy. In half-jest, we have considered labeling this structure “Temple of the Short Vowel,” given its pronounced (and temporally precocious) tendency to employ synharmonic spellings in place of the expected disharmonic ones.

Analysis of Data

	i	a	u
i	i...i 3 ii...i 1 ih...i 2 i'...i -	i...a - ii...a 2 ih...a - i'...a -	i...u - ii...u - ih...u 1 i'...u -
e	e...i - ee...i - eh...i - e'...i -	e...a - ee...a 2 eh...a - e'...a -	e...u - ee...u 1 eh...u 1 e'...a -
a	a...i 1 aa...i 8 ah...i 4 a'...i 1	a...a 18 aa...a 2 ah...a 2 a'...a -	a...u - aa...u 1 ah...u 1 a'...u -
o	o...i - oo...i 2 oh...i - o'...i -	o...a - oo...a 5 oh...a - o'...a -	o...u - oo...u - oh...u - o'...u -
u	u...i - uu...i 2 uh...i - u'...i -	u...a - uu...a 3 uh...a - u'...a 1	u...u 5 uu...u 4 uh...u 2 u'...u -

Figure 5.1 is a refined classification of the data presented above. It gives an exhaustive listing of the root or spoken vowel as these co-occur with the so-called silent, final vowels of the script. It also provides the number of occurrences attested for each combination of spoken versus silent vowel; the numbers include *only* those lexical items for which we are able to reconstruct the antecedent form. The numbers are therefore approximate and suggestive. It is likely that the number of short vowels substantially exceeds the quantities listed here.

Figure 5.1 is repeated in the Appendix, where it is followed by lists of the attestations of each category in the chart. A single example will explain Figure 5.1. In the uppermost left cell one finds i . . . i 3. This

Figure 5.1. Reconstructed vowels in words ... “silent” vowels in spellings.

means that there are three examples of the spoken vowel and the silent vowel both being *i*, which has a Common Mayan antecedent (e.g., **wi-tzi** ‘hill’ < CM **witz*). It also shows examples of disharmony, one of the type *ii . . . i* (**K’IN-ni** ‘sun’ < CM **q’iiN*) and two of the type *ih . . . i* (**tz’i-b’i** ‘write’ < CM **tz’ibb*).

The figure yields some interesting observations. The three synharmonic cells have a total of 39 attested forms; the remaining 12 disharmonic cells have a total of 36 attested forms for a total of 75. Based on our hypothesis, we expect the simple vowels (V) to coincide with the synharmonic configuration and the complex vowels (VV, V’, and Vh) to occur with the disharmonic. Verification of our prediction regarding the disharmonic cells reveals only a single, possible exception to our expectation.⁶² The synharmonic configuration, however, has more exceptions. Of the 39 attested forms, 26 are simple vowels and 13 are complex.

We take this incongruity to be a matter of markedness. Synharmony is unmarked and therefore has wider variation (has both simple and complex vowels), whereas disharmony is more marked having less variation (has only complex vowels). In linguistic terms, markedness means that given a paired opposition (e.g., *tiger* versus *tigress*; *harmony* versus *disharmony*), one of the terms is marked with more interpretable information (e.g., *tigress* is marked for [+female], with disharmony the unspoken and silent vowels are different) than the other. One of the consequences of this additional information is that the marked term (*tigress*) is more restricted in its range of reference. It can only refer to females, whereas the unmarked term is less restricted in its potential reference, since it can refer to males, females, or any combination thereof. Similarly the unmarked harmonic sequence allows pronunciations of both simple and complex vowels, whereas disharmonic spellings permit only complex vowels.

Although markedness occurs in all aspects of spoken language, it is noteworthy that it also occurs in written language. For example, in English orthography the letter “c” can signal the phoneme /s/ or /k/ (e.g., *bicycle*), but the more marked “ck” only refers to /k/ (*tick*). Similarly, the letter *o* by itself can refer to the tense /o/ or lax /a/, as *post*, *most*, *host*, *ghost* as well as *lost*, *cost*, and *frost*. Nevertheless, when another, silent vowel is added, it can only refer to the tense phoneme /o/, as *roast*, *toast*, *boast*, or *coast*. Thus, the unmarked *o* has a wider range of reference (it can refer to /o/ or /a/), while the more marked *oa* has a smaller range of reference (it can only refer to /o/).

Since the disharmonic spellings are marked, such spellings record only complex vowels, whereas the harmonic spellings are unmarked and record both the simple and complex vowels. The data bear this out nicely. Chance can hardly account for the nearly perfect referencing of disharmony to complex vowels—97 percent (35 of 36)—while the

62. The one possible exception is **yi-ch’a-ki**, *y-ich’aak*, ‘his claw’, where we might have expected **yi-ch’a-ka*, *y-ich’ak*, based on the data from Common Mayan. However, Lacadena and Wichmann (this volume) have noted that the lowland form may well have been long, since the Common Mayan short *a* in **ixk’ak* ‘fingernail, claw’ should have become a schwa in Itz’ah, Mopan, and Ch’ol. For instance, we would expect the Itz’ah *ich’äk*, but the attested form is *ich’ak*, a form that requires a pre-Itz’ah reconstruction, **i(h)ch’aak*. This goes a long way toward justifying its consistent disharmonic spelling. It also goes a long way toward dismissing the single exception to the observation that all known reconstructable disharmonic spellings signal complex vowels.

unmarked synharmonic spelling has only a 67 percent chance (26 of 39) of referencing a simple vowel. Nevertheless, it is still true that even the synharmonic odds favor a short vowel. Conceivably, such synharmonies reflect differential vowel-shortening during the Classic period (i.e., some words retained long vowels, others did not). What we can be sure of is that vowel reduction took place between Classic times and the present. It is also worth noting that not all silent vowels are equal. The chances of the configuration . . . *a* giving the “correct” reading (simple with synharmonic and complex with disharmonic) is 31 of 35 (89 percent); for . . . *i* it is 20 of 24 (83 percent), and for . . . *u* it is merely 9 of 15 (60 percent). If the spoken root vowel is *i*, there is only a 66 percent (6 of 9) chance of correct spelling; if *a*, 97 percent (33 of 34); if *u*, the chances are 11 of 17 or 65 percent. But if the root vowel is not a primary vowel (*e* or *o*), the spelling is 100 percent correct: if *e* then (3 of 3); if *o*, (7 of 7). From all this we conclude that the *u* and *i* are less predictable, while the *a* is much more regular.

These data suggest that the ancient Maya writers devised a remarkable means of distinguishing between simple and complex vowels. Although it was not a “perfect,” exceptionless system, it worked efficiently, finding good use for the so-called silent vowel. And like almost all human systems it successfully reflected the complexities of its internal parts, particularly when looked at in its marked/unmarked status.

Linguistic Implications

Our tabulations raise two complex topics. One pertains to phonology in Mayan languages, the other to the morphology of aspect in Classic Ch’olti’an, our label for the language of the Classic inscriptions (Houston et al. 1997; Houston et al. 2000b).

THE SCRIPT AND ITS VOWEL SYSTEM

Common Mayan had a ten-vowel system that consisted of five vowels (*i*, *e*, *a*, *o*, *u*) with corresponding long counterparts (*ii*, *ee*, *aa*, *oo*, *uu*). In the history of Mayan vocalic change the long vowels were intimately linked with the “laryngeal vowels,” *Vh* and *V’*. The careful comparatist must take into account the “complex” vowels of the script (*VV*, *Vh*, *V’*) astutely marked by the ancient scribes through disharmonic silent vowels. All daughter languages ultimately diverged from the Common Mayan system of long, short, and laryngeal vowels, but the divergence was constrained by the following linguistic law: The laryngeal vowels (*Vh* and *V’*) had to pass through a long vowel stage (*VV*) before becoming short vowels (*V*). We have, therefore, three possibilities of change: (a) *V’* > *VV*; (b) *Vh* > *VV*; and *VV* > *V*.

Examples of these possibilities and their logical combinations are shown in Figure 5.2. Note that Yukatek preserves the four types of vowels by changing the *Vh* to a long vowel with moving tone. In contrast, Tzotzil has lost all the distinctions of the complex vowels. Thus, Yukatek and Tzotzil possess “complementary” systems, as do Poqomchi’ and Chuj, Mam and Ch’orti’, Tojolabal and Kaqchikel. For example, whereas Mam lost the *Vh*, and retains all other distinctions, Ch’orti’ lost all other distinctions but preserves *Vh*. Tojolabal lost the distinction between long and short vowels, but retains all other features; its complement, K’iche’, maintains the separation between long and short vowels, but has

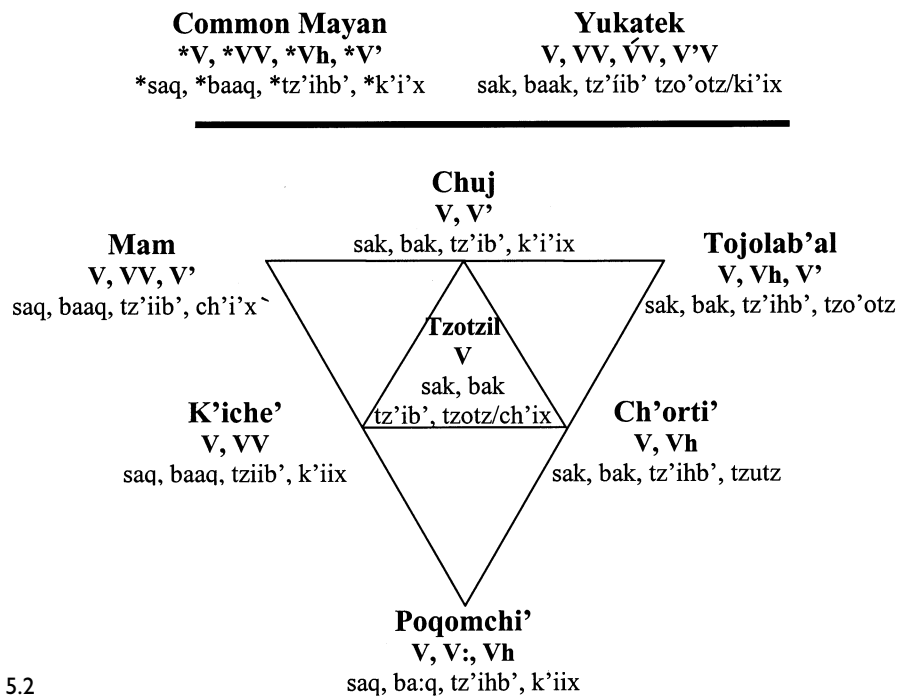


Figure 5.2

misplaced the other (laryngeal) elements. Figure 5.2 focuses on four terms, **saq* means 'white', **baaq* 'bone', **tz'ihb'* 'write', and **k'i'x* 'thorn'. Instead of 'thorn' we use reflexes of *tzo'*, *tz* in Tojolab'al and Ch'orti' because it suggests the possibility that *V'C became VVC by Common Ch'olan times, as argued below.

Figure 5.2 clarifies the possible disharmonies recorded in script, allowing for two possibilities. Either the script conserves the four Common Mayan configurations *V, *VV, *Vh, and V' or the Common Mayan system was already reduced to three, *V, *VV, *Vh, the Common Mayan *V' having become VV. The second possibility is most likely for Classic Ch'olti'an: (a) the script signals the long/short vowel distinction; (b) no Ch'olan language preserves the laryngeal stop (see Ch'ol, Ch'orti' *chan* < **ka'η*, for example); and (c) every Ch'olan language preserves the laryngeal fricative (see Ch'ol, Ch'orti' *tz'ihb'* < **tz'ihb'*, 'write'). Since Classic Ch'olti'an makes no distinction between 'paper' < CM **hu'η* and 'one' < CM **huun*, we are inclined to believe that no distinction is being made orthographically.

Another compelling piece of evidence that Common Mayan *V'C became VVC by Classic times can be found in the word for 'hair', which in the Ch'olan languages is *tzutz*, against Yukatek *tzo'otz* and Tojolab'al *tzo'otz*. This suggests that **tzo'tz* > **tzootz*, and by the Ch'olan rule that some (but not all) long mid-vowels become high vowels, **tzootz* became **tzuutz* and finally *tzutz* by modern times. There is no other regular way to get **tzo'tz* to the attested *tzutz*.⁶³ Furthermore, Ch'ol, which preserves Common Mayan **aa* as *a* and as schwa (written here as *ä*), provides evidence that **a'C* became **aaC*, since

63. The original version of this paper suggested that a second word, 'bat', was **so'tz'* in Common Mayan, largely on grounds that it was written *sootz'* in the colonial San Francisco Yukatek dictionary. It

words like **ya'x* 'yellow' and **cha'n* 'heaven' are realized as *yax* and *chan*, respectively. This is not to say, of course, that Classic Ch'olti'an did not have the sequence V'C. There are words attested in the modern languages, like *bu'(u)l*, 'beans', *ha'(a)s* 'plantain', *po'(o)m* 'jocote', and the like, which probably do not go back to Common Mayan, but are shared lowland terms, often cultigens. For these reasons, we suspect that Classic Ch'olti'an had already undergone the shift from Common Wasteko-Ch'olan *V'C to VVC, putting it in the Poqomchi' typology (V, Vh, V).

Figure 5.2, it should be understood, does not exhaust all possible typologies. It is feasible for a language to lose the distinction between long and short vowels, and then renew the vowel length by Vh > VV or V'C > VV, as shown in the innovative Tila Ch'ol dialect where all Vh became VV (Attinasi 1973). An even more noteworthy example of this is the Coban dialect of Q'eq'chi': *b'aaq* < CM **b'aaq*, 'bone', but *q'ooq*' < CM **q'ohq*', 'type of squash', and *k'ix* < CM **k'i'x*, 'thorn'.

Another typology can be found in those languages that conserved only a fraction of the original Common Mayan long-short vocalic distinctions. The Tecpan dialect of Q'eq'chi' indirectly preserved the Common Mayan **a* versus **aa*. All long and short vowels merged except final *aa* and *a*, where the *a* became a sixth vowel *e* and the long **aa* became *a*. This explains why the Tecpan dialect employs *chej*, 'pitch pine' and *nu-chaj*, 'my pitch pine' from Common Mayan **tyaj* and **nu-tyaaj*.⁶⁴

Nonetheless, the view proposed in this paper that Classic Ch'olti'an preserved the ten Common Mayan vowels runs counter to other proposals. Kaufman and Norman (1989) postulate a six-, not a ten-vowel system, stating that "long vowels normally merged with their short counterparts, except for **aa* and **a*. The contrast between **aa* and **a* was maintained by a process in which **a* became **ä* [schwa], and **aa* became **a*," resulting in "a six-vowel system in proto-Cholan," where the sixth vowel *ä* eventually merged with *a* in Eastern Ch'olan (Kaufman and Norman 1984: 85). They then claim that this merger "should not lead one to conclude that the /a/ : /ä/ contrast is a Western Cholan innovation rather than a common Cholan one" (Kaufman and Norman 1984: 85–86). However, their reasoning is circular. Supposedly, the six-vowel system of Common Ch'olan "depends on the existence of a contrast between long **aa* and short **a*, a distinction that was present in Greater Tzeltalan but *had been lost* by the time Western Cholan split off from Common Cholan" (Kaufman and Norman 1984: 86; emphasis ours). In other words, Kaufman and Norman's claim of vowel loss would seem to rest purely on assertion rather than proof. There is no independent confirmation of their proposed sequence of vowel change.

We do not believe there is any compelling reason to postulate a six-vowel system for Common Ch'olan. Indeed, the glyphic evidence points strongly to an opposing conclusion—that Common Ch'olan preserved the ten-vowel system of Common Mayan as it was transmitted through Greater Tzeltalan. Only by the end of the first millennium A.D.

is almost always the case that in this otherwise very careful dictionary the geminate vowels signaled a vowel, a glottal stop, and a rearticulated, second vowel (V'V), which typically came from Common Mayan *V'. The comparative evidence, however, leaves only the possibility of reconstructing it as **sootz'* in Common Mayan, since Modern Yukatek, Tojolab'al, and Mam (which otherwise retain Common Mayan *V') have it without the glottal stop.

64. Note that in Common Mayan and some descendant languages certain nouns undergo vowel lengthening when possessed.

was there any regionally specific evidence of vowel loss or vowel shortening (see above). Such trends account economically for the six-vowel system of Western Ch'olan and the ten-vowel system that we believe existed in the script. If so, the vowels of Common Ch'olan reconstructions in Kaufman and Norman must be revised to accord with Greater Tzeltalan and, ultimately, Common Mayan patterns.

Other features of our data bear discussion. To an impressive extent the primary vowels, *i*, *a*, and *u*, are the only ones serving as “silent” or “fictitious” vowels. The secondary vowels *e* and *o* seem never to be used in this manner. Such spelling practices reflect the well-known linguistic observation that languages of the world tend to regard *i*, *a*, and *u* as primary (Jakobson 1990: 294). Children unfailingly learn the primary vowels before, say, *e*, *o*, *ɔ*, etc. Languages frequently lose *e*, *o*, *ɔ* to the primary vowels (e.g., in Western American English *ɔ* becomes *a*, as in ‘cot,’ ‘caught’ = /kat/), and, in general, if languages have only three vowels, they tend to be *i*, *e*, and *a*.

The late occurrences of synharmony in previously disharmonic contexts raise intriguing questions. All examples come from the Late to Terminal Classic periods; most occur in Copan or on the western flanks of the Maya mountains, with extensions into the Pasión River drainage, perhaps as part of an ancient dialect zone. Synharmonic spellings in formerly disharmonic contexts indicate one of two things: (1) a sound change from complex to simple vowels, as expected by Ch'olan linguistic history (see below); or (2) an orthographic adjustment of a conservative or *retardataire* written language to correspond with patterns in spoken language. On present evidence, the first explanation has more to recommend it, involving a conservative sound system innovating into one with a reduced number of vowels. That these changes occurred during a time of known societal tumult conceivably reflects acute demographic stresses on speech communities or other, less well-understood processes.⁶⁵ Nonetheless, the hypothesized reduction of complex vowels during the Late to Terminal Classic period fails to explain the presence of disharmonies in the Postclassic codices where Knorozov first noted them. Perhaps the codices bore relatively little relation to contemporary vernaculars, a possibility supported by evident bilingualism in the screenfolds (Wald, this volume, 1994a; Lacadena 1997a). By the time of their composition the Postclassic codices might have been archaic or otherwise disjunctive with local vernaculars in matters of spelling and phrasing, a conventionalized artifact of ancient, time-honored practice.

THE MORPHOLOGY OF ASPECT

A productive feature of our theory of disharmony⁶⁶ is that it independently confirms the etymology of the so-called Ch'olan completive, which Kaufman and Norman (1984: 96,

65. However, synharmonies at Copan show a high degree of volatility. The spelling of ‘penis’ as -AT-ta, *at*, clusters in the twenty-year span after 9.17.0.0.0. Nonetheless, Altar Q, dating to 9.17.5.3.4, retains disharmonic -AAT-ti, *aat*, as do even later monuments, such as Copan Altar G2: A4, or 22A Stone: D2, dating to 9.18.5.0.0. The latest spellings at Copan favor the early, disharmonic spelling. We have no immediate explanation for this reversion, other than that it represents an attempt by scribes to recall prior conventions. Such conventionalization may signal the beginning of a process resulting in the archaic spellings of the codices (e.g., **mu-ti**, *muut*), written at a time when the long vowels had probably been lost.

66. See Robertson et al. (this volume) for a revised discussion of aspect/tense in Classic Maya script.

103) identify as **-i* for transitive and intransitives. Instead, a strong argument can be made that the Classic Mayan suffix for intransitives in the completive aspect (i.e., completed vs. ongoing action) was *-ii(y)*. Glyphically, the Maya rendered the completive as *-Ci-ya* (Stuart 1987; Houston 1997). According to our theory of disharmony, this would render a complex vowel— and more precisely *-iiy*—as the completive suffix.

Comparative evidence comes to an identical conclusion. The suffix probably descended from the Common Mayan **-eer* or **-iir*, originally attached to numbers, and signaling the completion of days, months, years, etc. The following data confirm this pattern:⁶⁷

Days ago:	two	three	four	five	six	seven
Cunén:	<i>kab-j-iir</i>					
Martínez:	<i>cabab-ir</i>	<i>oxib-ir</i>	<i>coh-eh-er</i>	<i>ob-ix-ir</i>	<i>va3-eh-er</i>	<i>vukub-ix-ir</i>
Mam:	<i>kab-j-ee</i>	<i>oš-ey-ee</i>	<i>kʷaj-aj-ee</i>			
Tzendal:		<i>ox-egh-ey</i>	<i>chon-egh-ey</i>			
Tzotzil:	<i>čaʼb-h-e</i>	<i>oš-h-e</i>	<i>čon-h-e</i>	<i>voʼ-h-e</i>	<i>vak-h-e</i>	
Mochó:	<i>kaʼbʼ-eh-ee</i>	<i>oš-eh-ee</i>	<i>kooŋ-eh-ee</i>			
San Frans:	<i>cab-h-e</i>	<i>ox-h-e</i>	<i>can-h-e</i>	<i>hob-ix-i</i>	<i>uac-h-e</i>	<i>uucb-ix-i</i>
Future days:	two	three	four	five	six	seven
Cunén:						
Martínez:	<i>cab-ih</i>	<i>ox-ih</i>	<i>coh-eh</i>	<i>ob-ix</i>	<i>vak-eh</i>	<i>vukub-ix</i>
Mam:	<i>kaaʼ-j</i>	<i>oš-j</i>	<i>kʷoj</i>			
Tzendal						
Tzotzil	<i>čaʼ-eh</i>	<i>oš-eh</i>	<i>čon-eh</i>		<i>vak-eh</i>	
Mochó	<i>kaʼbʼ-iih</i>					

In Common Mayan, **numeral + eej* suffix referred to future time; with the added completive suffix **-eer*, it referred to past time. It was not suffixed to verbs in Common Mayan. Nonetheless, Greater Tzeltalan innovated by moving **-eey* < **-eer* to verbs, a shift demonstrated by the fact that its reflex served as a verbal suffix not only in Cholan (*-ii* in the script and elsewhere) but also in Tzeltalan (*-ey*), as seen in the Ara grammar of Tzendal:⁶⁸ *x-paz-on-ey*, ‘yo hacía,’ contrasting with *x-paz-on*, ‘yo me hago’; or *x-paz-at-ey*, ‘tu hacías,’ versus *x-paz-at*, ‘tu te haces’. These verbs are clearly used as antipassives: the appearance of the absolutive on the verb and the translation ‘yo me hago’ indicates as much. The Ara grammar characterizes the incomplete *x-* prefix, cognate with Quichean **ka-* (Robertson 1992: 129–30, 186), as the “IMPERFECTO,” which has the effect of thrusting on-going action back in time, just as the suffixing of Common Mayan **-eer*

67. These data come from the following sources: *Cunén K’iche’*, Robertson and Canto Rodríguez (1992); *K’iche’* (colonial), Martínez (n.d.); *Mam*, Robertson, field notes; *Tzotzil*, Robertson, field notes; *Mochó*, Kaufman (1967); *Colonial Yucatek*, Michelon (1976).

68. William E. Gates Collection, box 65, folder 2, H. B. Lee Library, Brigham Young University, Provo, Utah.

reflected the same when attached to numbers. Ch'olti' also has a form *on-i* that is cognate with Cunén *j-eer*. Both derive from Common Mayan **oŋ-eer*, 'long ago.'⁶⁹ Thus, the proposed derivation is: Common Mayan **-eer* > Greater Tzeltalan **-eey* > Cholan **-iiy*, precisely the form spelled by disharmony in Classic Maya texts.

Conclusion

In this paper we have proposed a solution to a problem left unanswered by Knorozov in his formulation of phoneticism in Maya script. Synharmony represents an unmarked convention for rendering simple vowels, disharmony a marked feature that records complex vowels. Violations of such conventions in the Late to Terminal Classic periods probably reflect the beginnings of vowel reduction in the late first millennium A.D., especially in the eastern and southeastern portions of the Maya lowlands. If our case for disharmony is persuasive, then current ideas about the Classic vowel system must be radically altered to include a ten-vowel pattern. The prediction of Classic Mayan *-iiy* as the completive suffix, with independent confirmation by disharmonic spelling, lends considerable support to our hypothesis.

In this and other features, such as the nominal absolutizer *-aj* (Houston et al. 2001), Classic Ch'olti'an retains an archaism or conservatism that begs explanation. Our present perspective is that the language of the script is essentially a sacred, prestigious writing, as much an index of elite status and esoteric training as any other feature employed for this purpose by the Classic Maya. Local vernaculars, sometimes of far distant languages, such as Yucatek Mayan, percolated upwards to express themselves in this script, either through regionally distinct phrasings or through lexical items. It is probably significant that the places where sound changes register in script, in a wide arc embracing the southern and eastern area of Classic writing, is the area where the likely descendants of Classic Ch'olti'an, Ch'olti', and Ch'orti' survived into the historical period and beyond. By the Terminal Classic and Postclassic periods orthographic conventionalization reflected forms unlikely to have been spoken (and perhaps only dimly understood phonically) by scribes responsible for late glyphic texts. This essay has also made a broader methodological assertion: that Classic script cannot be studied, or understood, without the perspective of historical linguistics, which situates a dead language, the glory of an equally glorious civilization, within the lush branches of the Mayan linguistic tree.

69. The Common Mayan **ŋ* goes to *j* in Mamean-Quichean and *n* in the majority of other Mayan languages, while the initial *o* is syncopated in Cunén K'iche'.

APPENDIX

List of Counted Nouns

	i	a	u
i	i...i 3 ii...i 1 ih...i 2 i'...i -	i...a - ii...a 2 ih...a - i'...a -	i...u - ii...u - ih...u 1 i'...u -
e	e...i - ee...i - eh...i - e'...i -	e...a - ee...a 2 eh...a - e'...a -	e...u - ee...u 1 eh...u 1 e'...a -
a	a...i 1 aa...i 8 ah...i 4 a'...i 1	a...a 18 aa...a 2 ah...a 2 a'...a -	a...u - aa...u 1 ah...u 1 a'...u -
o	o...i - oo...i 2 oh...i - o'...i -	o...a - oo...a 5 oh...a - o'...a -	o...u - oo...u - oh...u - o'...u -
u	u...i - uu...i 2 uh...i - u'...i -	u...a - uu...a 3 uh...a - u'...a 1	u...u 5 uu...u 4 uh...u 2 u'...u -

Recorded examples of each pattern:

The 3 *i...i* words are: **pi-tzi**, *pitz* 'numeral classifier, units of 8,000'; **pi-si**, *pis* 'numeral classifier'; **wi-tzi**, *witz* 'hill'.

The 1 *ii...i* word is: **chi-ji**, *chiij* 'deer'.

The 2 *ih...i* words are: **tz'i-b'i**, *tz'ihb*, 'writing, paint'; **ti-li**, *tihl* 'tapir'.

The 2 *ii...a* words are: **AYIN-na**, *ahyiin*, 'cayman'; **yi-tz'i-na**, *y-ihzt'iin*, 'his younger brother'.

The 1 *ih...u* word is: **chi-ku**, *chihk*, 'coati'.

The 2 *ee...a* words are: **ke-le-ma**, *keleem*, 'youth'; **ch'e-na**, *cheen* 'cave, rock outcrop'.

The 1 *ee...u* word is: **te-mu**, *teem*, 'throne'.

The 1 *eh...u* word is: **e-b'u**, *ehb*, 'stairway'.

The 1 *a...i* word is: **yi-ch'a-ki**, *y-ihch'ak*, 'his paw'. (This may well have been pronounced *y-ihch'aak*.)

The 8 *aa...i* words are: **AAT-ti**, *aat*, 'penis'; **b'a-ki**, *b'aak*, 'bone'; **ja-yi**, *jaay*, 'thin?'; **na-hi**, *naah*, 'house'; **ta-ji**, *taaj*, 'obsidian'; **wa-WAAJ-ji**, *waaj*, 'tamale'; **yi-cha-ni**, *y-ichaan*, 'his mother's brother'; **pa-ti**, *paat*, 'back'.

The 4 *ah...i* words are: **cha-chi**, *chahch*, 'basket'; **cha-ki/CHAHK-ki**, *chahk*, 'rain god'; **na-b'i**, *nahb*, 'pool'; **pa-chi**, *pahch*, 'trap'?

The 1 *a'...i* word is: **HAAB-b'i**, *ha'b*, 'year'.

The 18 *a...a* words are: **CHAN-na**, *chan*, 'snake'; **CH'AM-ma**, *ch'am*, 'take, receive'; **KAB-b'a**, *kab*, 'earth'; **K'AN-na**, *k'an*, 'yellow'; **NAL-la/na-la**, *nal*, 'mazorca'; **SAK-**

ka, *sak*, 'white'; a-k'a-b'a, *ak'ab*, 'night'; b'a-la-ma, *b'ahlam*, 'jaguar'; ka-cha, *kach*, 'knot, tie'; ka-ka-wa, *kakaw*, 'cacao'; k'a-b'a, *k'ab*, 'hand, arm'; la-ka, *lak*, 'plate'; na-b'a, *nab*, 'hand measure'; pa-ka, *pak*, 'face down, bend over'; pa-ta, *pat*, 'acquire shape'; ta-ja, *taj*, 'pine'; tz'a-ka, *tz'ak*, 'whole, complete'; wa-ya, *way*, 'sleep, companion spirit'.

The 2 *aa...a* words are: a-ja-wa/AJAW-wa, *ajaw*, 'lord'; ya-la, *y-aal*, 'child of mother'.

The 2 *ah...a* words are: TAN-na, *tahn*, 'within, chest'; K'AK'-k'a, *k'ahk*, 'fire'.

The 1 *aa...u* word is: b'a-tz'u, *baatz*, 'howler monkey'.

The 1 *ah...u* word is: a-ku, *ahk*, 'turtle'.

The 2 *oo...i* words are: OK-ki, *ook*, 'foot'; OTOT-ti, *-otoot*, 'home'.

The 5 *oo...a* words are: -Co-ma, *-oom*, 'agentive'; ha'-o-b'a, *ha'-oob*, 'deictic with plural suffix'; ko-ko-ma, *kookoom*, 'Yucatecan family name'; to-k'a, *took*, 'flint'; u-to-ma, *ut-oom*, 'will happen'.

The 3 *uu...a* words are: hu-na, *huun*, 'book'; tu-pa, *tuup*, 'earspool'; yu-ha, *y-uuh*, 'his necklace'.

The 1 *u'...a* word is: b'u-la, *b'u'l*, 'bean'.

The 5 *u...u* words are: CHUM-mu, *chum*, 'seated'; chu-ku, *chuk*, 'seize'; ku-chu, *kuch*, 'burden, load'; mu-ku, *muk*, 'bury'; su-ju-yu, *sujuy*, 'pure'.

The 4 *uu...u* words are: k'u-k'u, *k'uuk*, 'quetzal'; tz'u-nu-nu, *tz'unuun*, 'hummingbird'; u-lu, *uul*, 'atole'; yu-mu, *yuum*, 'boss'.

The 2 *uh...u* words are: b'u-ku, *buhk*, 'clothes'; t'u-lu, *t'uhl*, 'rabbit'.

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On the Representation of the Glottal Stop in Maya Writing

ALFONSO LACADENA

Universidad Complutense, Madrid

SØREN WICHMANN

Max Planck Institute for Evolutionary Anthropology & University of Copenhagen

Introduction

In Houston et al. (this volume, 1998) the idea is proposed that the nonidentity of the vocalic part of signs that serve to spell morphemes (henceforth morphemic vowels) and the vocalic part of signs that function as phonetic complements (henceforth complement vowels), known since Knorozov as so-called disharmonic spellings, indicate complex vocalic nuclei (i.e., vowel length, the presence of a glottal stop or /h/). Synharmonic spellings, however, normally indicate a short vowel although, being unmarked, they may occasionally correspond to various kinds of complex nuclei. One of the assumptions of Houston et al. (1998), then, is that there is no distinction made between vowel length, glottalization, and preconsonantal /h/ by means of disharmonic spellings. In this paper we embrace the main, innovative hypothesis, that complex syllable nuclei were distinguished from short vowels in the script, but we also argue that vowel length and glottal stops were clearly distinguished from one another in the orthography. Further, we argue that neither disharmonic nor harmonic spellings indicate a preconsonantal /h/. Such an element is normally not indicated in the spelling at all, although in rare cases it may be indicated by inventive uses of logograms or syllabic signs that contain /h/.⁷⁰

70. The idea that a glottal stop was distinguished from vowel length in the script by a specific pattern of complementation was originally suggested in a message sent by Lacadena to fellow epigraphers on July 27, 1999. Since then, we have cooperated in refining and verifying the initial proposal and have both contributed with an equal portion of epigraphic and linguistic work. Lacadena's research was supported by a grant from the Comunidad de Madrid (Orden 2046/1998 de 2 de septiembre, Comunidad de Madrid) as part of the project "*Banco de Datos Filológicos Mayas de Tierras Bajas: Textos Logosilábicos*." During our research several colleagues have shown an interest in discussing our ideas, for which we are very grateful. In particular we wish to mention Stephen Houston and John Robertson, who have joined us in extensive and lively debates as we developed and refined our views, as well as Marc Zender, Cecil Brown,

Since we consider it well established in Houston et al. (1998) that synharmony normally indicates short vowels, we do not discuss this proposal in detail. Below we do, however, discuss synharmonic spellings of forms that contain short vowels that have developed phonologically from long vowels, which themselves have developed from glottalized vowels. And we also provide a list of evidence for and against the rule for short vowels, as part of an overview of the evidence for the entire set of rules that we are arguing for. Finally, we consider the words for ‘sun’, ‘sky’, and ‘year’ that seem to pose potentially serious challenges to the hypothesis of the function of synharmony.

The rule for synharmony, which we choose to label Harmony Rule 1, may be formulated as follows (where CVC represents any kind of logogram ending in a consonant, also including VC, VCVC, and CVCVC, and where CV represents a syllabic sign; a lowered “1” indexes like vowels):

HARMONY RULE 1

$CV_1C-CV_1 / CV_1-CV_1 \rightarrow CV_1C$.

A great amount of data is cited in the course of this paper. The main body of the text outlines the arguments for the revised theory of disharmony, while references to glyphic and linguistic attestations as well as other information relevant for the analysis of each spelling are given in a separate appendix, where all the hieroglyphic forms cited throughout the paper are listed in alphabetical order. The reader is advised to become familiar with the structure of the appendix⁷¹ before passing to the next sections.

The Nonrepresentation of Preconsonantal /h/ by Syn- or Disharmony

When comparing inscriptional forms with linguistic evidence from modern Ch’olan languages, it quickly becomes clear that many synharmonic spellings contain preconsonantal /h/’s. For example:

K’AK’-k’a, *k’a[h]k’* ‘fire’
TAN-na, *ta[h]n* ‘in, inside’
b’u-ku, *b’u[h]k* ‘clothes’

Albert Davletshin, and Barbara MacLeod, who have offered many congenial and helpful comments. Additional thanks go to Dmitri Beliaev, Erik Boot, Victoria Bricker, Nikolai Grube, Stanley Guenter, Christian Prager, Dorie Reents-Budet, and David Stuart, who have all lent us an ear or provided useful data. We are of course solely responsible for any inadequacies.

71. In the Appendix, and oftentimes elsewhere, the following language abbreviations are used. ACA: Akateko; CAK: Kaqchikel; CHL: Ch’ol; CHN: Chontal; CHN-a Acalan (colonial) Chontal; CHR: Ch’orti; CHT: Ch’olti; CHU: Chuj; GrLL: Greater Lowland Languages (i.e., Tzeltalan + LL); HUA: Huastec; ITZ: Itzaj; KAN: Q’anjob’al; KEK: Q’eqchi’; LAC: Lacandon; LL: Lowland Languages (i.e., Ch’olan and Yucatecan); HUA: Huastec; MAM: Mam; MOC: Mocho; MOP: Mopan; pM: proto-Mayan; POM: Poqomam; QUI: K’iche’; SAC: Sakapulteko; TCO: Teko; TOJ: Tojolab’al; TZE: Tzeltal; TZO: Tzotzil; WM: Western Mayan; Yu: Yucatecan; YUC: Yucatec. Spellings of language designations follow the Academia Maya for Guatemalan languages, for the others the most widespread current practices are followed. The orthography used is also generally that of the Maya Academy except when the orthography of a particular source has been retained. We use “ng” for the velar nasal, however.

tz'i-b'i, tz'i[h]b' 'writing, painting'
b'o-b'o, b'o[h]b' 'coyote'

The various cases even include pairs of identical spellings that nevertheless stand for two different words, which together represent minimal pairs in the spoken language that the scribes were representing. There are several examples of this. One is **K'AN-na**, *k'an* 'yellow, ripe' vs. **K'AN-na**, *k'a[h]n* 'stairway, seat, bench, base'. The first occurs, for example, in Primary Standard Sequences referring to a type of cacao.

K'AN-na ka-wa
k'an kaw
 'ripe cacao'

The latter occurs, for example, at Tonina on Monument 95, as the name-tag of the pedestals on which monuments are set.

K'AN-na-TUN-ni-li
k'a[h]n tuunil
 'stone base'

Or at Dos Pilas, in the dedicatory clause of Hieroglyphic Stairway 4, in the sentence:

PAT-la-ja K'AN-na-TUN-ni
patlaj k'a[h]n tuun
 'the stairway got made'

Although these last two examples are usually translated as 'precious stone', the rendering of **K'AN-na** as *k'a[h]n* 'stairway, seat, bench, base', a meaning well attested in the sources (cf. appendix), fits the context better than 'precious' and explains why only stone bases or stairways combine with the word **K'AN** and not stelae or lintels.

Another example of a minimal pair is provided by *tz'ak* vs. *-tz'a[h]k*, where the first is a verb root known from the successor-in-office expression (**TZ'AK-b'u**, **TZ'AK-b'u-li**) and the expressions introducing time intervals (**u-TZ'AK-a**, **u-TZ'AK-ka-a**, **u-TZ'AK-a-ja**). The latter is the same root derived as a numeral classifier in the numbered successor expression **NUMBER-TZ'AK-ka** occurring, for example, at Copan:

u-WAKLAJUN-TZ'AK-ka ch'a-ho-ma
uwaklajuntz'a[h]k ch'aho'm
 'the sixteenth incenser (of the dynasty)'

In these last cases, where it functions as a variant of the numeral classifier (other variants being **TZ'AK-b'u** or **TZ'AK-b'u-li**), **TZ'AK-ka** must be transliterated *-tz'a[h]k* 'beings placed in order', since numeral classifiers are derived from positional roots by means of an infix *-h-* (CVC > CVhC). The evidence for the status of *tz'ak* as a positional is the presence of the *-b'u* causative in the **TZAK-b'u** expressions and the fact that *tz'ak* still functions as a positional in modern Ch'orti'; the derivation in *-h-* is not only attested in modern Ch'olan languages but also even reconstructs to proto-Mayan (Kaufman 1986).

As a final example of phonological contrast we mention the Piedras Negras toponym **K'IN-a**, likely to be transliterated *K'i[h]na[']* 'Hot Water' (cf. Zender n.d.; the form is composed of *k'ihn* and *ha*', with phonologically predictable deletion of the /h/ of *ha*' caused by its postconsonantal position). In this toponym the first morpheme, **K'IN**, *k'i[h]n* 'hot', contrasts with **K'IN**, *k'in* 'sun'.

As a convention, preconsonantal /h/ was usually never written⁷² although comparative evidence shows that it could occur in any position. Thus, it should not only be reconstructed for some CVC-CV or CV-CV spellings corresponding to CVhC roots but also in some words of the shape CVhCVC and VhCVC. For example:

b'a-la-ma, *b'a[h]lam* 'jaguar'
yi-tz'i-na, *-i[h]tz'in* 'younger brother'
yi-ch'a-ki, *-i[h]ch'aak* 'claw'
nu-ku, *nu[h]ku[l]* 'skin'

as well as in certain verb roots of the shape VhC and CVhC:

u-ti-ya, *u[h]t-* 'to finish'
ko-ko-no-ma, *ko[h]k-* 'to guard, take care'
ya-k'a-wa, *a[h]k-* 'to give'

Note that the spelling **ya-k'a-** of the verb root 'to give' and the spelling of the first syllable of the word for night 'night', also **ya-k'a** (as contained in the spelling **ya-k'a-b'a**), result in two different transliterations. The first, yielding *a[h]k-* 'to give', contains a preconsonantal /h/, whereas the second, relating to *ak'ab* 'night', does not. Similarly, depending on the context, **pa-sa-ja** is in some cases to be transliterated *pa[h]saj* (i.e., as the passive verb meaning 'it was uncovered'), while in other cases it must be transliterated *pasaj* 'opening', the nominalized form (cf. Lacadena, this volume).

The full set of examples of forms for which a preconsonantal /h/ must be reconstructed in the final syllable (the syllable to which complementation applies) shows that a preconsonantal /h/ is found in items that are represented by nearly the whole range of complementation patterns, as seen in Table 6.1 (the data are repeated in the appendix with full references to attestations and sources). In the table we have included selected cognate Ch'olan forms that show an /h/ to be present and require that such a segment be represented in the transliteration. Full transliterations will be given after we have introduced our new spelling rules and some considerations of a historical linguistic nature. The point we wish to make at this stage is merely that there is no correlation between a specific complementation pattern and forms containing a preconsonantal /h/, which leads to the conclusion that preconsonantal /h/ is not represented in the script, neither by syn- nor disharmony, in spite of the suggestion of Houston et al. (this volume, 1998) that -Vh- be-

72. There are a few counterexamples, some of them discussed in Lacadena (this volume). To these we might add **K'UH-tzi**, *k'uuh tz* 'tobacco' (cf. appendix). In all but one case the rebus principle is employed in order to accommodate an explicit preconsonantal /h/ without violating the usual spelling rules, although in a single case, that of **K'IN-ni-hi-chi**, *k'ihnich* 'hot', a whole syllabic sign **hi** appears to represent the preconsonantal /h/ in a radical departure from normal spelling practices (cf. Wichmann 2000).

TABLE 6.1. Preconsonantal /h/ with Different Complementation Patterns

Complement vowel	Synharmonic	Disharmonic i	Disharmonic a	Disharmonic u
Morphemic vowel				
i	K'IN 'to be hot' (CHR k'ihn) tz'i-b'i 'to write' (pCh *tz'ihb') ti-li 'tapir' (CHL, CLT tihl)			tz'i-ku 'clay' (CHR tz'ihk)
e	che-le-te 'placed on' (same suffix as in 'centipede')		ne-na 'mirror' (CHT <neen>, YUC néen)	che-b'u 'quill' (CHL chehp, chehb'oy)
a	a-ka 'turtle' (CHL ahk) cha-pa-ta , 'centipede' (CHR chapaht) ch'a-b'a , ch'ab' 'fasting' (CHL ch'ahb') K'AK'-k'a 'fire' (CHL, CHR k'ahk) K'AN-na 'bench' (CHR, CHT k'ahn) na-b'a 'sea, pool' (CHL ñahb') TAN-na 'center, in' (CHR tahn) NAB'-b'a 'handspan' (YUC náab') -TZ'AK-ka 'classifier' (*tz'ahk)	CHAK-ki , 'thunder' (CHL chahk) cha-CHAPAT-ti , 'centipede' na-b'i , NAH-b'i 'sea, pool' (CHL ñahb') mu-wa-ni 'hawk' (CHR muahn)		cha-pa-tu , 'centipede'
u	b'u-ku 'clothes' (CHL b'uhkäl, CHR b'uhk)	ju-chi 'shell' (CHL juhch) K'UH-tzi 'tobacco' (CHL, CHR k'uhtz) pu-tz'i 'needle' (YUC púutz')		
o	po-po 'mat' (CHL, CHR pohp) b'o-b'o 'coyote' (CHR b'ohb')		yo-OL-la 'its heart' (TZO yol / 'o'lol YUC 'óol / 'ó'olal)	

TABLE 6.2. Spellings Following Harmony Rule 2

	i
e	
a	AT-ti, <i>aat</i> ‘penis’ < pM *<i>aaty</i> B’AK-ki / b’a-ki <i>b’aak</i> ‘bone’ < pM *<i>b’aaq</i> cha-b’i, <i>chaab</i> ‘honey’ < pM *<i>kaab</i> cha-chi, <i>chaach</i> ‘basket’, cf. CHN <i>chach</i> ‘basket’ (CHN /a/ < pM *<i>aa</i>) ch’a-ji, <i>ch’aa</i> ‘incense, drops’, cf. ITZ <i>ch’aj</i> (ITZ /a/ < pM *<i>aa</i>) yi-cha-ni, <i>-ichaan</i> ‘brother’ < pM *<i>ikaan</i> yi-ch’a-ki, <i>-i[h]ch’aak</i> ‘claw’ < pM *<i>ix-k’a(a?)q</i> (see appendix) ja-yi, <i>jaay</i> ‘clay bowl’, cf. MOP <i>jaay</i> na-hi, <i>naah</i> ‘house’ < pM *<i>ngaah</i> pa-ti, <i>paat</i> ‘back’ < pM *<i>paaty</i> ta-ji, <i>taaj</i> ‘bloodletter’ < pM *<i>tyaah</i> wa-WAJ-ji, <i>waaj</i> ‘tamal’ < pWM *<i>waah</i>
u	mu-ku-yi, <i>mukuuy</i> ‘dove’ < #<i>ix muukuur</i> SUTZ’-tz’i / su-tz’i, <i>suutz</i> ‘bat’ < pM *<i>sootz</i> TUN-ni, <i>tuun</i> ‘stone’ < pM *<i>toong</i>
o	yo-OTOT-ti, <i>-otoot</i> ‘house’ < pM <i>atyooty</i> OK-ki, <i>ook</i> ‘foot’ < pM *<i>ooq</i>
a	
i	yi-tz’i-na, <i>-i[h]tz’iin</i> ‘younger brother’ < pM *<i>ihzt’iin</i> AHIN-na, <i>a[h]yiin</i> ‘caiman’ < pM *<i>abiyiin</i>

longs to the group of complex nuclei collectively represented by disharmony. Word-internally, where harmony rules are suspended because the vowels there serve to represent true vowels and not suprasegmental features, preconsonantal /h/’s are also absent in the representation, as we saw above in the discussion of examples of the type **b’a-la-ma**, *b’a[h]lam* ‘jaguar’. Thus, it can be stated as a general rule that preconsonantal /h/’s were not normally represented in the script at all.

The Representation of Vowel Length

We propose that not all complement vowels—but generally only **i**—may serve to indicate vowel length. The one exception is when the morphemic vowel is itself **i**, in which case the complement vowel chosen for indicating vowel length is **a**. The rule can be formulated more formally in the following way:⁷³

73. When necessary, we use an arrow to indicate the passage from the transcription to the transliteration level (a “greater than” sign is reserved for the symbolization of diachronic phonological developments). Since transcriptions are conventionally represented by bold characters and transliterations by italics, the arrow is usually not needed; normally we simply indicate the passage between the two levels by means of a comma.

HARMONY RULE 2

- 1a CVC-Ci / CV-Ci → CVVC, where V = {e, a, u, o}
 1b CVC-Ca / CV-Ca → CVVC, where V = {i}

The argument for Rule 2 is quite simply the large number of forms that are spelled according to the pattern described in it and that have been reconstructed for earlier linguistic stages with long vowels. A list is given in Table 6.2 along with the reconstructions⁷⁴ (please refer to the appendix for more information).

Given the consistency of the external evidence for length in forms spelled according to Rule 2, length may be posited for similarly spelled forms even if external evidence is lacking, as is the case for a number of forms cited in Houston et al. (1998): **ch'a-ti** 'dwarf'; **ju-b'i** 'conch, trumpet'; **ju-chi** 'shell'; **na-li** 'native from?'; **pa-xi** 'month name', **wo-hi** 'month name', and **xo-ki** 'shark'(?). The one exception, where the indication of a long vowel corresponds to a reconstructed short vowel, is **u-si**, *uus* 'mosquito' (Houston et al. 1998: 280). It is not certain, however, if it is actually the word 'mosquito' that is intended in the inscription. Another possibility is that it spells *usii[j]*, a word related to Ch'orti' *usij* 'vulture' and Mochó *'usiih*. Script-internal data suggesting that **u-si** is an underspelling of **u-si-ja** is provided by the name **a-K'AN-u-si-ja**, *A[j]k'an Usiij*, attested at Yaxchilan, which we interpret as meaning 'Yellow Vulture'. With this interpretation a counterexample is changed to a good example since the Mochó form seems to support the hypothetical long /ii/ suggested by the **i-a** complementation pattern. More serious are the examples where spellings indicate short vowel although a long vowel has been reconstructed. The examples found are **CHAN-na**, *chan* 'snake' < pM **kaan* and **K'IN-ni**, *k'in* 'sun, day' < pM **q'iing*. We believe that conservatism of spelling may explain these two exceptions, a point we return to below. Another apparent counterexample, **AJAW-wa**, *ajaw* 'ruler' < pM **aajaaw* is more likely due to an error in reconstruction or to a special conditioning rule relating to disyllables in proto-Western Mayan or a later stage.

74. All the reconstructions are standard except 'claw'. This has been reconstructed as **ix-k'aq* by Robertson in Houston et al. (1998), but there seems to be a possibility open for vowel length in the last syllable given the complexity in this syllable in KEK *ixi'ij* / *ixi'j* / *iixi'j* and the presence of /a/ in CHL *ejk'ach* and MOP-ITZ *ich'ak*, languages where pM **a* regularly yields *ä*, while *a* is from **aa*. Houston et al. (1998: 287) argue, alternatively, that **yi-ch'a-ki** occurs outside of its normal context, in a name, something which may have fostered an irregularity.

For some of the protoforms Brown and Wichmann (2003) provide alternative reconstructions. Thus, several forms that Kaufman and Norman (1984) reconstruct with a long vowel, for instance **b'aaq* 'bone', are reconstructed by Brown and Wichmann with a long vowel followed by /h/ (e.g., **b'aahq*). The other cases in point are (in Kaufman and Norman's reconstructions): **paaty* 'back', **sootz'* 'bat', **toong* 'stone'. Since Brown and Wichmann stipulate that **VVh* becomes **VV* in proto-Ch'olan and since the script does not record preconsonantal glottal fricatives anyhow, these new reconstructions do not affect the present arguments concerning the interpretation of the orthographical principles of the script. There is one item which becomes problematical because of the new reconstructions, however. This is **ngaah* 'house', which is now reconstructed by Brown and Wichmann (2003) as **ngAh*, where /A/ is a vowel of some special quality, possibly of intermediate length. We believe the proto-Ch'olan reflex should have a short vowel. It is preferable to defer a discussion of this item until Brown and Wichmann is completed and published.

TABLE 6.3. Spellings Following Harmony Rule 3

	a	u
i		chi-ku , <i>chi</i> '[i]k 'coatimundi' 7-si-pu , <i>huk si</i> 'p 'Seven Sin'
e	che-e-na <i>che</i> 'en 'it is said' CH'EN-na , <i>ch'e</i> [e]n 'cave' se-ka , <i>se</i> 'k 'Yukatek name for the 5th month' WE'-la , <i>we</i> '[e]l 'food' CHWEN-na , <i>chwe</i> 'n (part of a title)	
a		a-nu , <i>a</i> 'n 'be, exist' b'a-ku , <i>b'a</i> 'k 'child' b'a-tz'u , <i>b'a</i> 'tz 'howler monkey' CHAN-nu , <i>cha</i> 'n 'to watch over' tz'a-ku , <i>tz'a</i> 'k 'clay' CHAPAT-tu , <i>chapa</i> [a]'[h]t tza-ku , <i>tza</i> 'k 'perforator'
u	b'u-la , <i>bu</i> '[u]l 'bean' JUN-na , <i>ju</i> 'n 'book' JUN-na , <i>ju</i> 'n 'one' -LAJUN-na , <i>-laju</i> 'n 'ten' lu-ma , <i>lu</i> '[u]m 'earth' mu-ka , <i>mu</i> 'k 'tidings' nu-na , <i>nu</i> 'un '?' sa-ku?-na? , <i>saku</i> 'n 'elder brother' u-su-ku-na , <i>-suku</i> 'n 'elder brother' tu-pa , <i>tu</i> [u]'[h]p 'earflare' yu-ha , <i>-uh</i> [-al?]' 'necklace' ya-BAT-na , <i>yaCV</i> 'n	
o	chi-wo-ja / chi-wo , <i>chiwo</i> 'j 'tarantula' mo-o-la , <i>mo</i> 'ol yo-OL-la , <i>yo</i> '[h]l o-na , <i>o</i> 'n 'many' pi-xo-la , <i>pixo</i> 'l 'hat' to-k'a , <i>to</i> [o]'[h]k 'flint' ya-xo-o-ka , <i>yaxo</i> 'ok 'green valley' wo-o-ja / tu-wo-ja , <i>(-)wo</i> 'oj 'glyph(s)'	

The Representation of the Glottal Stop

The Hypothesis

In this section we propose that glottal stops were indicated by means of the disharmonic spelling patterns described in Rule 3 below. Disharmonic spellings alone did not suffice to indicate the contrast between *V' and *V'V, so the rule covers both cases, and maybe even a third, *VV'. It is important to stress that disharmony according to Rule 3 strictly

and only indicates a glottal stop, not a glottal stop *and* rearticulation or glottal stop *and* vowel length.

HARMONY RULE 3

- 3a CV(C)-Cu → CV'(V)C, where V = {i, a}
 3b CV(C)-Ca → CV'(V)C, where V = {e, u, o}

In Table 6.3 we list all the securely identified and semantically transparent items that follow Rule 3.

Internal and External Evidence for the Hypothesis

We begin the defense of the hypothesis with an entirely script-*internal* argument.

Argument A: Orthographic Doubling

Throughout the hieroglyphic corpus there are several instances where an extra vowel is inserted, seemingly with no other function than to indicate the rearticulation of a vowel, something which entails the presence of a glottal stop. Significantly, the “silent” vowel in these cases is never *i*, but always *a*. We have registered the following spellings:

nu-u-na ‘?’
ya-xo-o-ka ‘Green Valley’
²-o-la ‘heart’
che-e-na ‘quotative’
mo-o-la ‘?’
wo-o-ja ‘glyph(s)’

The form represented by **nu-u-na** exists in an alternative spelling as **nu-na**. Apparently this spelling can represent the same linguistic form as **nu-u-na**, which suggests that the orthographically doubled *u* is at least partly redundant. Similarly **ya-xo-o-ka**, probably to be read *Yax (H)o’k* ‘Green Valley’, may be compared to **a-SAK-o-ka** ‘He of White Valley’, another case of alternation between single and double vowels in the context of a specific disharmonic spelling. The word spelled ²-o-la is also attested as **o-la**. And finally **wo-o-ja** is attested (possessed and preceded by the preposition as **tu-wo-ja**). On the basis of these examples alone we may stipulate that Ca indicates the presence of a glottal stop when co-occurring with a morphemic vowel *e*, *u*, or *o*.

It is significant that we never find orthographic vowel-doubling with the complementation pattern described in Harmony Rule 2 (i.e., patterns that would indicate a long vowel). Thus, ***che-e-ni**, ***nu-u-ni** or similar spellings are absent from the corpus.⁷⁵ We do find, however, orthographic vowel-doubling in combination with harmonic complementation, which would seem to run counter to the whole theory of disharmony.

75. In the spelling **a-SAK-chi[-i]-ya** (YAX, L. 44, A4), which is an epithet of provenience of one of Itzamnaaj Bahlam’s captives, the syllabic sign *i* is infixed into the hand-shaped **chi** sign. Our observations predict that *i* should be read before **chi**.

a-ku-la	a-ku-u-lu
IXIK-k'u-la	k'u-u-lu
	a-pa-a-la
	wi-i-li

To understand such spellings it is necessary to comprehend that both these spellings and spellings with orthographic vowel-doubling combined with disharmonic complementation represent the same V'V sequence, but in different ways. The orthographic vowel-doubling indicates the rearticulated vowel and possibly also the glottal stop,⁷⁶ whereas the disharmony indicates the glottal stop only, not the rearticulated vowel. Spellings such as **nu-u-na**, **²-o-la**, **che-e-na**, **mo-o-la**, and **wo-o-ja** are complete in the sense that they indicate both the glottal and the rearticulated vowel. Spellings such as **nu-na** are incomplete in the sense that the rearticulated vowel is underspelled. The forms **a-pa-a-la** and **a-ku-u-lu** primarily indicate the rearticulated vowel. This accounts for the absence of disharmony, but it does not account for the presence of synharmony. It is important to realize that synharmony in this case actually is motivated and that it has its usual function: to indicate a short vowel. The scribes who chose these kinds of spellings simply analyzed CV'VC forms as containing two syllables, an analysis that is perfectly viable.⁷⁷ Thus the two different conventions of combining orthographic vowel-doubling with either (a) disharmony according to Rule 3 or (b) synharmony appear to represent two different, equally viable analyses, according to which the V'V sequence is either viewed as a single, complex syllable nucleus (a) or as a sequence of two syllables where /' has the function of a consonant (b).

Before we turn to arguments that, to some degree, involve the comparison between the written forms and attested or reconstructed forms (i.e., *external* arguments), some background about Mayan historical phonology is needed.

In proto-Mayan, as reconstructed by Kaufman (1964) and in subsequent works, there is a distinction between syllable nuclei of the shape *V' (vowel-glottal stop) and *V'V (vowel-glottal stop-same vowel). Although both shapes contain a glottal stop, we use the terms *glottalized* vs. *rearticulated* vowels to distinguish terminologically between the two. According to Kaufman and Norman (1984: 83) (henceforth in this chapter, K&N) the pM sequence *V'V was retained in Greater Tzeltalan, whereas pM *V' goes to pGrTze *VV. This scenario has been proven to be oversimplified by Brown and Wichmann

76. It may be argued that the syllabic signs i, e, a, u, o are better interpreted as 'i, 'e, 'a, 'u, 'o (i.e., as consisting of a glottal stop + vowel). A script-internal argument for this would be cases like **tz'i-i** 'dog', **TE'e** 'tree', **K'AB'A'a** 'name', and **MO'o** 'macaw' where the initial glottal stop of the syllabic sign apparently complements the final glottal stop of the root (in these cases *tz'i'*, *te'*, *k'ab'a'*, and *mo'*). It might also be argued that any other complement but a syllabic sign in a vowel would alter the interpretation of the root such that the vowel-only complement is simply a default mechanism. Thus it is not completely clear whether vowel-only syllabic signs do or do not contain an initial glottal stop. If they do, vowel-doubling renders the presence of a glottal stop explicit.

77. A modern linguist might opt for the same analysis. Indeed, so does Kaufman (1964) who treats his reconstructed *CV'VC forms on a par with the CVCVC "*patrón morfémico*." There is an internal Ch'olan morphophonemic argument for the two-syllable analysis of V'V in Kaufman and Norman (1984: 68), who note that CV'VC is reduced to CV'C just as CVCVC is reduced to CVCC under suffixation (e.g., **na'at* -> **na't*- and **ixim* -> **ixm*-). Thus the second V of V'V behaves morphophonemically just like any other whole syllable-nucleus.

(2003). These authors show that K&N's *V' heads as many as five different correspondence sets, which warrants five different reconstructions, not just one. It is true that some of these come out as *VV in Greater Tzeltalan, but not all. In addition K&N sometimes reconstruct a long vowel where Brown and Wichmann think there was a glottal stop. This is not the proper place for a full account of the new system of reconstructions, which reckons with no less than six different types of protonuclei containing glottal stops (*V', *V_s', *VV_s', *V'h, *V_s'h, *VV'h),⁷⁸ but we can describe a few salient features: (a) whenever at least one Mayan language has a glottal stop in a given form, a glottal stop should also be reconstructed for the protolanguage; (b) all the nuclei containing a glottal stop and *h lose the glottal in Yucatecan, Mamean, Tojolab'al, and Chuj, whereas the three protonuclei containing a glottal stop but no *h retain the glottal stop in the same languages just mentioned; (c) Mochó is the only language that retains the glottal stop in reflexes of *V'h, *V_s'h, and *VV'h; (d) a short vowel in a protonucleus always gives a short vowel in proto-Ch'olan, whether or not it is combined with a glottal stop and/or *h, whereas a "special" (see note 78) or a long vowel always gives a long vowel in proto-Ch'olan, again irrespective of whether *' and/or *h follow(s).

Perhaps the most important feature of the new findings is the last-mentioned point. Unlike K&N (1984: 83) cited above, Brown and Wichmann (2003) do not posit a development *V' > *VV. Rather, they propose that nuclei that have a long vowel in proto-Greater Tzeltalan (and in proto-Ch'olan) and descend from a nucleus containing a glottal stop simply lose the glottal. There is glyphic evidence that the loss of glottal stops happened during the Classic period. It is interesting that both the theory of K&N and that of Brown and Wichmann predict that early attestations of some words in the Ch'olan inscriptions should first carry indications of the presence of a glottal stop and later of vowel length—however, for different reasons: for K&N length would arise as a compensation for the loss of the glottal stop, whereas for Brown and Wichmann such developments in the Ch'olan inscriptions would point to the development *VV' > *VV. (It is important to remember here that the orthographic system cannot indicate both a glottal stop and length; when both features are present only the glottal stop would be indicated.) However, Brown and Wichmann make stronger predictions than K&N, since in their system the words that undergo a change in spelling from Harmony Rule 3 (indicating a glottal stop) to Harmony Rule 2 (indicating vowel length) must be only those words that Brown and Wichmann reconstruct with a proto-Ch'olan *VV' nucleus (i.e., a subset of the words reconstructed with *V' in K&N). Forms reconstructed with *V' in Brown and Wichmann should, if they suffer an orthographic change, "jump" directly from Harmony Rule 3 to Harmony Rule 1.

With this background we are ready to turn to the external arguments for the existence of Rule 3.

Argument B: Minimal Pairs

Given that the known vocabulary of the Maya inscriptions is still limited, it is not expected that all phonological contrasts are establishable by minimal pairs.⁷⁹ Thus, even if

78. The symbol "V_s" indicates a vowel of some special quality, probably of intermediate length.

79. In linguistic terminology a "minimal pair" is a set of two forms that differ only with respect to one of the segments, helping to prove that a structural distinction is made between the segment or segments

we find just two pairs illustrating the existence of glottals, it should be deemed highly significant. The two pairs are:

CHAN-na ‘sky’	vs.	u-CHAN-nu ‘his guardian’
b’a-ki ‘his prisoner’	vs.	b’a-ku ‘title of youth’

In part, the argument from minimal pairs is a script-internal one. If it may be considered established that the **a-a** synharmony pattern signals the presence of a short vowel /a/ and that the **a-i** disharmony pattern signals a long /aa/, then it is logical to suppose that **a-u** signals complexity in the syllable of some other kind. This supposition is supported by external linguistic data, since **CHAN-nu** corresponds to Yucatec *chá’an* ‘spectacle, show, pageant’ and **b’a-ku** corresponds to colonial Yucatec <baac> ‘child’. Given that Yucatec glottal stops are always inherited from proto-Mayan, there is little doubt that the syllable nuclei of ‘guardian’ and ‘title of youth’ are complex in a way that rembles their Yucatecan cognates, namely by containing a glottal stop. However, even in the absence of this type of external data the script-internal contrasts alone strongly suggest the same conclusion.

Argument C: Direct Agreement with Ch’olan or Yucatecan Data

Any argument that draws directly on Ch’olan data will obviously have more force than an argument that involves linguistic reconstructions, especially if these are controversial. Thus, it is a compelling piece of evidence that all the forms containing glottals in the documented Ch’olan languages *and* occurring in the script are spelled according to the pattern of Rule 3. There are only four such forms, but this quantity should be weighed against the fact that on average only about one percent of the lexical items in the extant Ch’olan languages contain preconsonantal glottal stops. The sample is small, then, but it allows us to formulate a strong prediction that any Ch’olan form carrying a preconsonantal glottal that turns up in the inscriptions should be spelled according to Rule 3.

The four forms in question are **b’u-la**, *bu’ul* ‘bean(s)’, **WE’-la**, *we’el* ‘food’, **che-e-na**, *che’en* ‘quotative’, and **chi-ku**, *chi’ik* ‘coatimundi’. ‘Bean’ and ‘food’ each have a glottal stop in all the modern Ch’olan languages. The quotative has a glottal in Western Ch’olan. Finally, for ‘coatimundi’ we have evidence from the spelling <chiic> in Morán that the word contained a glottal stop in Ch’olti’. Since vowel length was beginning to get lost in Eastern Ch’olan as early as in Classic times (Houston et al., this volume, 1998; Lacadena and Wichmann 2002) and since there are no indications from cognate forms that ‘coatimundi’ contained an /h/, the spelling in Morán (1695) can only indicate a glottal stop—and, indeed, Yucatecan languages show a glottal stop in this item.

Finally, the codical (Dresden) spelling **7-si-pu**, interpreted as *huk si’p* ‘Seven Sin’ (a deity name) may also be seen as directly supporting Rule 3, since the language represented in the relevant section of the Dresden Codex would be Yucatecan and since we have the forms *si’p* ‘crime’ in Itzaj and *si’ip* ‘fault, sin’ in Yucatec.

involved which is not conditioned by the phonological environment. /toz/ ‘toes’ and /doz/ ‘doze’ is a minimal pair in English that demonstrates the phonological opposition of /t/ : /d/; and /sIt/ ‘sit’ vs. /It/ ‘it’ is another minimal pair showing that /s/ has phonemic status since its presence or absence has consequences for the semantic interpretation of a form.

Argument D: Phonological Developments

The final argument for the revised theory of disharmony is that the distributional study of spelling variants produces enlightening results for historical linguistics when interpreted according to the new proposals. Table 6.4 shows the temporal distribution of spelling variants containing, respectively, glottal stops, long vowels, and short vowels according to the proposed spelling rules (the reader is referred to the appendix for more information on the individual items). Phonological history (both K&N 1984: 83 and Brown and Wichmann 2003, discussed above) predicts that, chronologically, combinations of vowels and glottal stops (according to K&N all their *V' nuclei, but according to Brown and Wichmann only their *VV' nuclei) should precede long vowels, which in turn should precede short vowels. These predictions are borne out. The more narrow predictions of Brown and Wichmann (2003) are of particular interest. Independently of the glyphic evidence, these authors reconstruct 'cave' and 'spider monkey' as, respectively, pM *k'ee'n and *maa'x. The first undergoes the predicted change from orthographic conformity with Harmony Rule 3 to conformity with Harmony Rule 2 (i.e., CH'EN-na > CH'EN-ni). The latter happens only to be attested at the changed state (i.e., as ma-xi). In contrast, 'head', which is first spelled JOL-la and later JOL-lo, seems to "jump" directly from having a glottalized to having a plain, short vowel. This is in keeping with Brown and Wichmann's reconstruction of the item as pM *jo'l. For the other items in Table 6.4 it is either not possible to reconstruct earlier stages or not possible to provide unambiguous reconstructions based on the nonglyphic evidence. Thus, here the reconstructions rely to a greater degree on the evidence of the inscriptions.

It is highly interesting that the datable instances of long vowels resulting from earlier *VV' nuclei appear within the narrow time range 9.14.14.13.17–9.17.11.6.1 or A.D. 726–782 (geographically within a strip cutting through the southern lowlands, at Piedras Negras, Bonampak, Yaxchilan, Tikal, and El Chorro.)⁸⁰ asking the ceramicist Dorie Reents-Budet about possible dates of two vessels bearing additional spellings of forms with long vowels developed out of former nuclei-carrying glottal stops, we elicited the dates A.D. 700–800 for a vessel from Copan bearing the spelling CHAPAT-ti and A.D. 680–750 for a codex-style vessel bearing the spelling to-b'o-ti. In order not to bias her answers, Reents-Budet, who communicated her estimates to us in January 2001, did not receive prior information about our own hypotheses. Thus, the close match between her estimates according to which the vessels span A.D. 680–800 and our hypothesis according to which the vessels should fall within A.D. 726–782 is all the more remarkable.

80. Among the undated instances one might eventually prove to be at least partially datable, namely the occurrence of the undeciphered scroll-formed sign with a ni complement on the Altun Ha Jade Plaque in an emblem glyph which is likely that of the site of Altun Ha itself. From our point of view, a date close to the 9.15.7.0.0 of Nim Li Punit St. 2, whose inscription carries a similar spelling, would be gratifying. The dating, however, is uncertain due to the absence of long-count dates at Altun Ha to fix the temporal framework. Most epigraphers would probably follow Schele and Grube (1994), who interpret the calendar rounds on the inscription as 9.6.15.6.4 8? K'an 7 Sip (569) and 9.7.11.2.17 7 Kab'an 5 K'ank'in? (584), which are very early dates from our point of view. A dating that comes somewhat closer to the expected is David Pendergast's (1982–1990) statement that the tomb where the plaque was found is from the middle of the seventh century.

The time span for the datable occurrences of **V' > V* is A.D. 741–800. The fact that this agrees with the time span A.D. 726–782 for **VV' > VV* strongly suggests that these two changes are really part and parcel of the same development and should be described as a single development simply consisting of the loss of the glottal stop. A geographic look at the phenomena leads to the same conclusion. The change **V' > *V* is first found in the east at Machaquila and only 11 years later in the west at Yaxchilan; **VV' > VV* is first attested in the west at Yaxchilan and only 12 years later in the east at Nim Li Punit (and shortly thereafter at Tikal). Thus, there does not seem to be any dialectal distribution to **V' > V* and/or **VV' > VV*. Both changes are pan-Ch'olan from the very inception.

The first instance of the loss of the glottal stop in A.D. 726 occurs just before vowel length begins to get lost in the eastern vernacular area—the area roughly composed of the eastern Petén, the Pasión, and Belize (Lacadena and Wichmann 2000, 2002). The loss of the vowel length distinction is first attested in the eastern Peten by around 9.15.0.0.0 (ca. A.D. 730) (Lacadena and Wichmann 2002: table 8) and becomes widespread from 9.17.0.0.0 (ca. A.D. 770) onwards (Lacadena and Wichmann 2002: table 8; Houston et al. 1998: 284–85). In the east, the two changes seem to have occurred no more than a few generations of speakers apart.

A First Evaluation of the Hypothesis

We are on safe ground when postulating the existence of a glottal stop in the pronunciation of a given written form whenever a form spelled according to the pattern described by Rule 3 serves as an example for one or more of the four arguments just given, that is, (1) is substituted by a spelling that contains orthographic doubling *or* (2) enters into a minimal pair with forms spelled synharmonically *or* according to the pattern of Rule 3 *or* (3) is temporally earlier than a cognate form recorded by disharmony according to Rule 2 *or* (4) represents a form that has a glottal stop in the language family (Ch'olan or Yucatecan) relevant for text in which the form is found. There are other cases, however, where we lack both script-internal evidence for the interpretation of a given spelling and linguistic reconstructions that support the interpretation made. It is our feeling, however, that the spelling rules proposed have such an overall integrity that it is worthwhile considering that some of the linguistic reconstructions must be revised. Moreover, we shall see that only some of the revisions needed hinge exclusively on the glyphic evidence. Before we go on to discuss these revisions, we need to evaluate the strength of the theory in terms of the evidence so far presented. There is a list of 21 spellings whose interpretation must be considered strongly supported insofar as they comply with one or more of the four criteria just mentioned. In addition, as already mentioned, there is a set of spellings containing orthographic vowel-doubling whose existence brings support to the theory in general. The various spellings are listed in Table 6.5.

An e-u Pattern?

An instance of a possible *e-u* pattern is **te-mu** 'seat, bench'. Since the *e-u* phonetic complementation is exceedingly rare, it is likely, however, that the /u/ vowel of **te-mu** should be interpreted as belonging to a suffix. Since Ch'olan suffixes are usually the shape of

TABLE 6.4. Examples of Words Suffering Orthographic Changes Involving Harmony Rules

Initial stage	Intermediate stage	Final stage
CHAPAT-tu <i>chapaa'[h]t</i> 'centipede' ca. 460–652	CHAPAT-ti > <i>chapaa[h]t</i> (vase, CPN, 700–800)	CHAPAT-ta > <i>chapa[h]t</i> (K1256, ca. 725?)
“SCROLL”-na (K3924 ^a , ca. 725?)	“SCROLL”-ni 9.15.7.0.0 / 738 (NMP)	“SCROLL”-nu 9.18.13.17.1 / 804 (AML)
CH'EN-na <i>ch'ee'n</i> 'cave'	CH'EN-ni > <i>ch'een</i> 9.14.14.13.17 / 726 (YAX)	> <i>ch'en</i>
T174-chi-tu <i>...chii't</i> '?'	T174-chi-ta > <i>...chiit</i> 9.15.15.14.0 / 747 (TIK)	> <i>*...chit</i>
ya-BAT-na <i>yaCVV'n</i>	ya-BAT-ni > <i>yaCVVn</i> 9.15.0.15.3–9.17.11.6.1 / 732–782 (YAX, BPK)	> <i>*yaCVn</i>
<i>*tob'oo'[h]t</i> 'jumping'	to-b'o-ti > <i>tob'oo[h]t</i> (K3433*, 680–750)	> <i>*tob'o[h]t</i>
<i>*maa'x</i> 'spider monkey'	ma-xi > <i>maax</i> 9.16.6.0.0 / 757 (PCR)	> <i>max</i>
<i>*chelee'[h]t</i>	<i>*chelee[h]t</i>	che-le-te > <i>chele[h]t</i> 9.16.0.14.15 / 752 (YAX)
CHAN-nu <i>cha'n</i> 'supervisor'	CHAN-na > <i>chan</i> 9.15.10.0.0–9.17.10.6.17 / 741–781 (MQL, ITN)	
SIHOM-ma <i>siho'm</i> '?'	SIHOM-mo > <i>sihom</i> 9.18.10.0.0 / 800 (IXK)	
no-#-la <i>noho'l</i> 'south'	no-#-lo > <i>nohol</i>	
JOL-la <i>*jo'l</i> 'head'	JOL-lo > <i>jol</i>	
CHWEN-na <i>chwe'n</i>	CHWEN-ne > <i>chwen'</i> 9.18.10.0.0 / 800 (NAR)	
<i>*sina'n</i> 'scorpion'	si-na-na > <i>sinan</i>	
<i>*t'u'l</i> 'rabbit'	t'u-lu > <i>t'ul</i>	

^aKerr 1989–2000

TABLE 6.5. Spellings that Crucially Support Rule 3

Complement vowel	Disharmonic a	Disharmonic u
Morphemic vowel		
i		chi-ku, <i>chi</i> '[i]k 7-si-pu, <i>Huk Si</i> '[i]p T174-chi-tu, ... <i>chi</i> 't
e	WE'-la, <i>we</i> '[e]l che-e-na, <i>che</i> 'en CHWEN-na, <i>chwe</i> 'n	
a		CHAN-nu, <i>cha</i> '[a]n CHAPAT-tu, <i>chapa</i> [a]'[b]t b'a-ku, <i>b'a</i> 'k
u	nu-na, <i>nu</i> 'n a-ku-la, <i>aku</i> '[u]l IXIK-k'u-la, <i>ixik k'u</i> '[u]l b'u-la, <i>b'u</i> '[u]l nu-u-na, <i>nu'un</i>	
o	ya-xo-o-ka, <i>yax(h)o</i> 'ok mo-o-la, <i>mo</i> 'ol ²-o-la, <i>o</i> '[b]l wo-o-ja, <i>wo</i> 'oj SIHOM-ma, <i>siho</i> 'm no-#-la, <i>nobo</i> 'l	

syllable nucleus + consonant, it is likely that an underspelling has occurred. Some of the consonants most susceptible to underspelling are /l, m, n/ (cf. Zender 1999: 135–42).⁸¹ Thus, when we find in a Yucatec source a form <ah chemul yoc(il)> ‘navegante’, <chemul> meaning ‘boat’, it is not a far reach to hypothesize that the spelling **te-mu** renders *temu*[l] ‘bench’ (the Yucatec meaning ‘boat’ would be an extension of the pM meaning ‘bench, seat’, which is well attested in the other Mayan languages). While an *-ul* suffix is rare in Ch’olan and Yucatecan, such a suffix (possibly *-uul*) existed in pM and could have been inherited into the language(s) of the glyphic inscriptions. Chuj has a productive nominal suffix *-ul* and there is evidence that this is inherited from Greater Kanjob’alan (cf. KAN *txaj* ‘prayer’, *txaj-ul* ‘altar’, GrKan *’ij ‘to support’, **y-ij-ul* ‘bar [tranca]’). The suffix is also found in Eastern Mayan, however (cf. QUI *b'al* ‘to twist’, *b'al-uul* ‘traversing stick in fence’, POM *ihq* ‘to carry’, *ihq-ul* ‘tumpline’). Final proof, as well as information about whether the /u/ is long, short, or glottalized, might some day be found if **te-mu** showed up in the corpus followed by an additional syllabic sign. Even if such a full pattern should not be found it is still a viable hypothesis that **te-mu** contains an underspelled suffix.

Spellings like **e-b'u**, **ye-b'u**, and **ye-b'a** for ‘stairway’ (the latter two in possessed form) may similarly all contain underspelled suffixes.

81. Other consonants that are commonly underspelled are /ʔ, h, j/.

Generally, one should always be aware of the possibility of underspelling before applying the harmony rules, since the rules are suspended when both the C and the V part of a syllabic sign contributes to the spelling of actual segments. For example, at Yaxchilan the name of one of the most famous captives of Bird Jaguar IV is spelled **a-u-ku** on several occasions, which would suggest a transliteration like *a[j]-uk* ‘he of Uk’. But in one case the same epithet of origin is written **a-u-ku-la** showing that the correct transliteration is *Aj-Uku’l*.

Another form that supports an **e-u** pattern for indicating a glottal is the spelling **che-e-b’u** for ‘quill’. Above we have considered orthographic vowel-doubling accompanied by disharmonic complementation as strong evidence for the specific type of disharmonic complementation in question to have the function of indication glottalization. Similarly, **che-e-b’u** would constitute strong evidence for an **e-u** pattern. The scarcity of examples with the **e-u** pattern and the comparatively large number of representatives of the **e-a** pattern, however, invites caution in positing the **e-u** pattern as a general rule. It may have been an alternative rule at certain places or times or it may be a general rule that **a-** and **u-**complementation have the exact same function of simply being alternative ways of indicating a glottal stop. Because of the scarcity of examples at hand, it is difficult to reach conclusions about this, so we choose to leave the question for future studies.

It is a common experience of historical linguistics to find that new data effect revisions of earlier reconstructions. In the following section we propose some revisions based both on the new data offered by the Maya inscriptions and on inspections of data recorded in the colonial and modern periods.

Potential problems

In the preceding sections we hope we have given good arguments for the new disharmony rules for Maya writing. These arguments were in the main drawn from the distribution of patterns of spelling internally in the writing system and only drew upon directly attested linguistic data or simple and uncontroversial reconstructions. In a series of cases, however, the consistent application produces interpretations that are at variance with traditional reconstructions. In this section we discuss these cases and other potential problems for our hypotheses. We start out with a discussion of some arguments by Houston et al. (this volume, 1998) that go against some of our claims.

Were Glottal Stops Preserved in Ch’olan?

There are forms whose spellings indicate a glottal stop although only proto-Mayan forms and not proto-Ch’olan forms have been reconstructed with glottal stops. These raise the question of whether the glottal stop in such forms was preserved in Ch’olan. Houston et al. (1998: 289–90) discuss this question and conclude that the glottal stop must be considered to have been lost unless it is actually attested in the modern languages.

Either the script conserves the four Common Mayan configuration **V*, **V:*, **Vh* and **V’*, or the Common Mayan system was already reduced to three, **V*, **V:*, **Vh*, the Common Mayan **V’* having become *V:*. The second possibility is most likely for Southern Classic

Mayan: (a) the script signals the long/short vowel distinction; (b) no Ch'olan language preserves the laryngeal stop (see Chol, Chortí *chan* < **ka'ng*, for example); and (c) every Cholan language preserves the laryngeal fricative (see Chol, Chortí *tzihb'* < **tzihb'*, 'write'). Since Southern Classic Mayan makes no distinction between 'paper' < CM **hu'ng* and 'one' < CM **hu:n*, we are inclined to believe that no distinction is being made orthographically.

Another compelling piece of evidence that V' become V: by Classic Maya times is the fact that the word for 'bat' is **su-tz'i**. The San Francisco (Yucatec) dictionary has *sootz* [so'otz']. Because long **o:* became *u:* in Ch'olan, it follows that **so'tz'* would have had to have become long **so:tz'*, before becoming *su:tz'* ← **su-tz'i** in the script. Similarly, the word for 'hair' in Yucatec is *tzo'otz*; in Chol and Chorti it is *tzutz*, which suggests that same scenario: that *V' became *V: as Ch'olan was separating from Greater Tzeltalan. For these reasons, we believe that Southern Classic Mayan has already undergone the shift from V' to V:.

We believe that all these arguments can be refuted.

Argument 1: No Ch'olan language preserves the laryngeal stop.

Against this argument it might be said that the absence of the element in the current languages does not preclude it from having occurred in earlier stages of Ch'olan. Moreover, there are some indications that Ch'olti' has preserved a laryngeal in forms where other Ch'olan languages have lost it—which is rather surprising given that the inscriptions show the loss of the glottal stop occurring throughout Ch'olan dialects as early as the eighth century A.D. A study of the use of double vowels in the Morán materials shows that such double vowels always correspond to either *Vh* or a nucleus containing a glottal and never to pM *VV. Glottals are not consistently marked; the forms that contain double vowels in Morán are very often alternatively spelled with a single vowel, and it is far from all daughters of forms that would have contained a glottal in their syllable nucleus which are marked as having a glottal stop. Nevertheless, Ch'olti' must have been conservative with respect to glottal stops because there are a couple of forms that are written with doubled vowels which cannot be explained other than as retentions of ancient, glottalized syllable nuclei, namely <-oob> '3p plural' and <yabaac> 'its soot'. The plural suffix occurs in the following items: <uinicoob> 'people' (Morán 1695: 161), <chamenoob> 'the dead' (Morán 1695: 79), <banaloob> 'juntos o agregados' (Morán 1695: 131). Clearly, <oo> must indicate the glottal stop, which is still retained in Yucatecan, but lost in other Ch'olan languages. The possessed form <yabaac> 'its soot' occurs in Morán (1695: 125), glossed as *hollín*. Here all Mayan languages, including Yucatecan, Chuj and Tojolab'al, have lost the glottal, but it is still found in K'iche'an (e.g., K'iche' *ab'a'q* 'hollín') (Ajpacaja Tum et al. 1996: 2), Tz'utujil *ab'a'q* 'tizne acumulado, hollín' (Pérez and Hernández 1996: 1). Even if these doubled vowels should be dismissed as errors in Morán's recording, the argument that Ch'olan languages ought to still reflect phonological distinctions that were made in the script is not very strong; thus, the /j/ : /h/ distinction was made in the script (Grube, this volume) but is only weakly attested in the extant languages, and vowel length was also distinguished in the script although in colonial and modern Ch'olan only vestiges of it remain.

Argument 2: The inscriptions make no distinction between ‘paper’ and ‘one’.

This is true since both may take a *-na* complement, but the reason is not that both are marked as having length, yielding *huun*, but that both are marked as yielding a glottal stop, yielding *hu’n* and *ju’n*. Although ‘one’ is usually reconstructed as pM **juun*, we find it significant that Chuj *hu’ng* preserves a glottal stop, at least according to one source (Hopkins 1967: 179). The absence of a glottal in the other Mayan languages may be explained as a consequence of the combined facts that ‘one’ will normally be suffixed with a classifier and that many Mayan languages have a rule whereby a glottalized vowel turns into a long vowel under suffixation. Kaufman (n.d.) mentions this rule in his attempt to account for the apparently disparate forms for ‘head’, namely Eastern Mayan **jooloom* vs. non-Eastern **jo’l*. Just as **jooloom* is underlyingly **/jo’l-oom/*, we believe that **juun*-CLAS is underlyingly **/ju’n-CLAS/* and that several Mayan languages—but not Chuj or Ch’olan of the Classic period—simply reanalyzed the morpheme **ju’n* as **juun* by identifying the suffixed form as the basic one.

Argument 3. The proposed development pM **o’* > **oo* > **uu* is proven by the fact that the hieroglyphic form of the word for ‘bat’ is *su-tz’i*, *suutz’*.

This argument is problematical in more than one way. Most importantly, we are not convinced that the pM word for ‘bat’ should be reconstructed as **so’tz’*; it seems that a reconstruction without the glottal stop is more correct. It has been reconstructed as **sootz’* by Kaufman (1964: #40) and as **soohtz’* by Brown and Wichmann (2003). Although ‘bat’ has also been reconstructed as pM **so’tz* by Justeson et al. (1985: 46) and K&N (1984: #488), it is difficult to see what the evidence for the glottal stop is. The modern YUC form *sòotz’* (Bricker et al. 1998: 248) is the regular reflex of pM **sootz’* (or **soohtz’* in the revised system) and must surely be the same form as the one intended by the author of the San Francisco dictionary.

Argument 4. The word for ‘hair’ in Ch’olan, *tzutz*, comes from pM **tzo’tz*, which shows that glottals get lost in Ch’olan since Ch’olan /u/ can only come from **o’* via an intermediary **oo*.

If this type of argument is valid, it might as well be used to prove the opposite point, that glottals were retained. All it takes is to cite forms reconstructed with glottals that do not raise their vowels. Three good examples of this are pM **k’ee’n* ‘cave’, pM **-o’b’* ‘third person plural’, and the form reconstructed as **oong* ‘many’ in Houston et al. (2001: 3), but whose glyphic form *o-na* and the Tzotzil and Q’eqchi’ reflexes (cited in the appendix) rather suggests **o’ng*. All fail to undergo vowel raising to **ch’in*, **ub’*, and **un*; instead, they come out as *ch’en*, *-ob’*, and *on* in Ch’olan languages. Thus, all must have retained their glottals long enough for raising not to apply.

Some Problematical Forms

In the list of disharmonic spellings in *-a* there are three, which according to our Rule 3, should contain a glottal stop although they have traditionally been reconstructed with long vowels. Potentially these are the most problematical forms for the hypothesis

represented by our Rule 3. The items in question along with the reconstructions cited by Houston et al. (1998: 281–82) are given below.⁸²

to-k'a ‘flint’ < LL **took*
tu-pa ‘earspool’ < cf. YUC *tùup*
yu-ha ‘his necklace’ < pM **uuh*

Since the spelling rules, which, we remember, are supported internally by the writing system, predict glottal stops in these forms, we are prompted to question the reconstructions. In the case of ‘flint’, the new diachronic phonological research by Brown and Wichmann (2003) offers a possible solution. In the system of these authors there are three possible reconstructions for ‘flint’:

pM **took* > pCh **took*
 pM **toohk* > pCh **took*
 pM **too'hk* > pCh **too'k*

They do not actually reconstruct this item because it is doubtful whether it has proto-Mayan ancestry given that it is attested only in the lowland languages. There are, however, other forms that show the same kinds of reflexes in the lowland languages matching up with reflexes that vary such that three different proto-Mayan canonical forms are required to account for the totality of correspondence sets. In the word for ‘flint’, Yucatec-Lacandón shows a low vowel, Mopan-Itzaj a short vowel, and Ch'olan has a short *o* (which provides little information concerning the ancestral shape of the nucleus). The exact same types of correspondences in the lowland languages match up with forms that have a glottal in Mocho in the items reconstructed by Brown and Wichmann (2003) as **aa'hl* ‘heavy’, **ii'hq* ‘wind, air’, **pii'hm* ‘thick’, and **tuu'hx* ‘vagina, female.’ If ‘flint’ had been attested in Mochó, we would know whether to choose a reconstruction with or without a glottal stop. But as it is, the reconstruction remains ambiguous, and we can conclude that there is no positive, comparative linguistic evidence against interpreting the frequent spelling **to-k'a** as indicating the presence of a glottal stop.

The same argument holds for ‘earspool’. Here the attestation is even more limited—to Yucatecan only. And again the correspondence of a low vowel in Yucatec-Lakandon to a short vowel in Mopan-Itzaj could potentially fit a proto-Mayan **VV'h* > proto-Ch'olan **VV'* nucleus (even if ‘earspool’ is not attested in Ch'olan it must be a Ch'olan word because the proto-Yucatecan reflex of pM **VV'h* is **VVh*, which does not fit the spelling **tu-pa**).

The third item, **yu-ha** ‘necklace’, similarly looks like a case of an item where a traditionally reconstructed long vowel should be interpreted as containing *VV'* because of the glyphic indication of a glottal stop. The Yucatecan reflexes of this are, however, of a different structural type from that of ‘flint’ and ‘earspool’ (Table 6.6). Moreover, there is no help gained from the new reconstructions by Brown and Wichmann, who posit **Uh* for this item.⁸³ It is likely, however, that the item should be transliterated *yuha[l]*, that is, with

82. We restrict the discussion to monosyllables because polysyllables pose special problems for phonological history relating to stress and phonotactics. Such items are discussed in Lacadena and Wichmann (n.d.).

TABLE 6.6. Cognates of Three Potentially Problematical Forms

	* <i>uu'h</i> 'necklace'	* <i>tuu'p</i> 'earspool'	* <i>too'k</i> 'flint'
Teko	<i>uuw-</i>		
Q'anjob'al	<i>u'-</i>		
Akateko	<i>u'</i>		
Jakalteko	<i>uw-</i>		
Chuj	<i>uj</i>		
Tojolab'al	<i>uh-</i>		
Tzeltal	<i>uh-</i>		
Tzotzil	<i>u-</i>		
Ch'ol	<i>-uh</i>		<i>tok'</i>
Chontal	<i>uh</i>		
Ch'olti'	<u>		
Ch'orti'	<i>uh</i>		<i>tok'-tun</i>
Mopan		<i>tup</i>	
Itzaj		<i>tup</i>	
Yucatec	<i>uh</i>	<i>tùup</i>	<i>tòok'</i>
Huastec	<i>ow</i>		

an underspelled *-al* suffix (cf. appendix). Cognate sets for the three lexemes are listed in Table 6.6, which is based on standard lexicographical sources as cited in Wichmann and Brown (n.d.).

On Harmony Rule 2 Applied to Items That Have a Preconsonantal h in Extant Ch'olan

Table 6.7, which expands upon the data of Table 6.1, shows that the glyphic evidence suggests the existence of both Vh, VVh, and V'h sequences. The first is generally recognized by Maya linguists as playing a role throughout the history of Mayan languages. A sequence VVh is not normally reconstructed for any stage of Mayan, however. Nevertheless the glyphic data provide at least five examples that carry this type of syllable nucleus: **CHAK-ki**, *chaa[h]k* 'rain, the rain god', **na-b'i**, *naa[h]b'* 'pool', **ju-chi**, *juu[h]ch* 'shell', **K'UH-tzi**, *k'uuh[tz]* 'tobacco', and **pu-tz'i**, *puu[h]tz'* 'needle'. While the /h/ is not normally supplied glyphically,⁸⁴ the vowel length is clearly indicated by disharmonic **a-i** and **u-i** complementation patterns.

The first item, **CHAK-ki**, spells a form which is unique in that it descends from a disyllable (cf. for comparative evidence, for instance, CHU *chawok* 'day name'). In this it

83. Lest the reader should think that there is circularity in our argumentation, we would like to stress that the reconstructions of Brown and Wichmann (2003) are consciously not based on hieroglyphic evidence, in spite of Wichmann's coauthorship of both papers. Indeed, on the whole, Brown and Wichmann do not provide better evidence for the three harmony rules discussed in the present paper than does previous work done mostly by Terrence Kaufman. Their work does, however, increase the precision of the arguments and sheds important new light on certain matters of detail.

84. One of the rare examples of an explicit rendering of preconsonantal /h/ is the spelling **NAH-b'i**, which spells parts of the name *Ahku'ul Mo' Naahb'* and occurs twice on the fallen stuccos of Palenque, Temple XVIII (Marc Zender, in personal communication, March 2000).

TABLE 6.7. Preconsonantal /h/ with Different Complementation Patterns (Transcriptions and Transliteration)

Complexity	Short	Long	Glottalized
Vowel			
i	K'IN, <i>k'i[h]n</i> 'to be hot' tz'i-b'i, <i>tz'i[h]b'</i> 'to write' ti-li, <i>ti[h]l</i> 'tapir'		tz'i-ku, <i>tz'i'[h]k</i> 'clay'
e	che-le-te, <i>chele[h]t</i> 'placed on'	ne-na, <i>ne'[h]n</i> 'mirror'	
a	AK-ka, <i>a[h]k</i> 'turtle' CHAPAT-ta, <i>chapa[h]t</i> 'centipede' ch'a-b'a, <i>ch'a[h]b'</i> 'fasting' K'AK'-k'a, <i>k'a[h]k'</i> 'fire' K'AN-na, <i>k'a[h]n</i> 'bench' na-b'a, <i>na[h]b'</i> 'sea, pool' TAN-na, <i>ta[h]n</i> 'center, in' -TZ'AK-ka, <i>-tz'a[h]k</i> 'classifier'	CHAK-ki, <i>chaa[h]k'</i> 'thunder' CHAPAT-tu, <i>chapa'[h]t</i> 'centipede' na-b'i, <i>naa[h]b'</i> 'sea, pool' mu-wa-ni, <i>muwaa[h]n</i> 'hawk'	CHAPAT-ti, <i>chapaa[h]t</i> 'centipede'
u	b'u-ku, <i>b'u[h]k</i> 'clothes' t'u-lu, <i>t'u[h]l</i> 'rabbit'	ju-chi, <i>juu[h]ch</i> 'conch' K'UH-tzi, <i>k'uu[h]tz</i> 'tobacco' pu-tz'i, <i>puu[h]tz'</i> 'needle'	
o	po-po, <i>po[h]p</i> 'mat' b'o-b'o, <i>b'o[h]b'</i> 'coyote'		yo-OL-la, <i>y-o'[oh]l</i> 'its heart'

TABLE 6.8. Examples of Different Sources for Modern Ch'olan CVhC Canons

pM	CHU	CHL	MOP	YUC
* <i>kahwoq</i>	<i>chawuk</i> 'day name'	<i>chahk</i> 'thunder'	(<i>chaak</i> 'rayo')	<cauac>/ <i>cháak</i> / 'rain'
* <i>q'ahq'</i>	<i>k'ak</i> 'fire'	<i>k'ahk</i> 'fire'	<i>k'aak</i> 'fire'	<i>k'áak</i> 'fire'

contrasts with a form such as K'AK'-k'a 'fire', where the /h/ is also required in the transcription (from CHL and TZO data, cf. appendix), but where the vowel is short, corresponding to monosyllables in cognate forms. Some selected comparative evidence is given in Table 6.8.

The two words 'thunder' and 'fire' assume the same general shape CVhC in modern Ch'ol, but the canonical shapes are still differentiated in the Classic period and they do in fact derive from two quite different original shapes, *CVCVC and *CVhC. *Chaahk* was borrowed from Ch'olan into Yucatecan as *chaahk* or *chahk*, yielding YUC *cháak* by a regular development; Yucatec, however, also preserved the original form as <cauac>, the name of the nineteenth day in the 260-day calendar. Important evidence for the pM form **kahwoq* is Poqomam *kahq* 'rayo, relámpago, trueno' (Mayers 1966), which retains

medial /h/ and final /q/, as well as the general disyllabic shape. The peculiar VVh sequence of Classic *chaahk* seems to have arisen by the process **kahwoq* > *chahwak* > *chahwk* > *chahuk* > *chahak* > *chaahk* (i.e., by palatalization, vowel-leveling, syncope, vocalization, vowel-leveling, syncope, and compensatory lengthening). The picture presented here is simplified. There are differences in the developments of the two forms even within Ch'olan. Thus Ch'olti' has <chahac> 'rayo' and <kak-nab> 'mar'. Surprisingly, Ch'olti' seems to retain a form for 'thunder, lightning' that is more archaic than the normal Classic form. Thus, although the script itself contains evidence for the intermediate, archaic form *chahuk* in the expression **cha-hu-ku NAH**, *chahuk naah* 'lightning house' (PNG, Throne 1, Legs), the regular form is *chaa[h]k*, spelled **cha-ki** or **CHAK-ki** for the name of the Rain God. This is not the only case where the language of the script looks more like Ch'orti' than Ch'olti', however (Wichmann 2002).

The second item, **na-b'i**, is also unique among the five in that it descends from a form that had a preconsonantal velar fricative, /j/. It is reconstructed as pM **najb'* in Brown and Wichmann (2003). In these authors' system the proto-Ch'olan shape would have been **nahb'*.⁸⁵ A reconstruction of the shape **naabb'* would have been equally possible, however. The fact of the matter is that the *alä* distinction is neutralized in Western Ch'olan when, as in this case, the following consonant in the corresponding proto-Mayan form was **j*—earlier, both long **aa* and short **a* become *a* (K&N 1984: 85). Because the quality of the neutralization representative (i.e., the *a* vowel, which in a sense represents both *ä* and *a*) is the same quality as the normal reflex of **aa*, it is actually quite reasonable to posit proto-Ch'olan **naabb'* (or **naajb'*) in agreement with glyphic evidence.

The remaining items also seem to have individual explanations. The extant language data for **ju-chi** is limited to modern Ch'olan and that of **pu-tzi** is limited to the lowland languages. It is thus hard to trace their earlier shapes. It may be the case that they belong to the same canonical shape as 'pool' and may be explained in a similar manner. In support of this interpretation is the fact that 'needle' has a high vowel in Yucatec and a long vowel in Itzaj-Mopan, which are the normal reflexes of a proto-Mayan **Vj* nucleus.

The cognates of **K'UH-tz'i** 'tobacco' are attested not only in the lowland languages but also in Chuj and Q'anjob'al, both of which languages have *k'utz*. Brown and Wichmann (2003) reconstruct proto-Mayan **k'uhtz* for this item. The Yucatecan reflex is posited as identical with the proto-Mayan one. It is significant that the spelling is attested in the Dresden codex. Itzaj-Mopan have *k'uutz*, so a likely interpretation is that the spelling reflects a pre-Itzaj-Mopan stage after the vowel had become lengthened but before the **h* got lost.

On Harmony Rule 3 Applied to Items That Have a Preconsonantal h in Extant Ch'olan

A number of spellings, such as **ne-na** 'mirror', **yo-OL-la** 'his heart', **tz'i-ku** 'clay', and **CHAPAT-tu** 'centipede' require the reconstruction of a **V'h* (or perhaps in some cases

85. When taking glyphic evidence into account a **j* rather than **h* would be warranted given the insights of Grube (this volume), but, as mentioned in note 83, Brown and Wichmann consciously avoid building on glyphic evidence in order to avoid causing circularity in the epigraphic arguments of the present paper.

*V'Vh or *VV'h) sequence for the language of the Classic inscriptions since, on the one hand, the data from extant Ch'olan languages indicate the presence of a preconsonantal /h/ and, on the other hand, the disharmony patterns indicate the presence of a glottal stop. The historically most transparent of the four forms is 'mirror', which has reflexes throughout Western Mayan and Yucatecan: KAN *nen*, ACA *nen*, CHU *nen*, TZO *nen*, CHT *nehn* <neen>, MOP *neen*, YUC *néen*. The reconstruction of K&N (1984: 126, 355) is pM **nehn* ~ *neen* and that of Brown and Wichmann (2003), pM **nehn*. Lamentably, there is nothing in the attestations to support the presence of a glottal stop. For 'heart' there are the entries TZO 'o'lol 'middle, center, medium-sized' (Laughlin 1975)—perhaps also TZO 'o'n-il 'heart' in Haviland (1981: 376) and YUC 'ó'olal 'will, desire' listed alongside 'óolal 'will, desire' under the root 'óol in Bricker et al. (1998: 17) indicating that a glottal stop is warranted. The presence of /h/ is suggested by CHL *ohl-il*. Thus Rule 3 fares better in this case. For the two remaining cases, **tz'i-ku** 'clay' and **CHAPAT-tu** 'centipede', the attestations are scarce and restricted to lowland languages, so there is no external evidence for a sequence combining a glottal stop and a preconsonantal /h/.

Final Evaluation of the Hypothesis

The first evaluation of the hypothesis that a glottal stop is represented in Maya writing by complementation according to the pattern that we have described as Harmony Rule 3 referred to internal evidence. The evidence was internal in two senses: evidence from the writing system itself gave us disharmonic spellings following Rule 3 in substitution for forms that have explicit vowel-doubling, and it also gave us a pattern by which Rule 3 type spellings are earlier than Rule 2 type spellings, which are again earlier than Rule 1 type spellings, something that must reflect the order VV' > VV > V since any other diachronic order is out of the question. The linguistically internal evidence from the language group to which the language of a given inscription belonged showed that all forms with a glottal in the linguistic sources (Ch'olan when the glyphic text is Ch'olan or Yucatecan if the text is Yucatecan) and that recur in the inscriptions are spelled according to Rule 3 in the inscriptions. This kind of evidence is stronger than the evidence drawn on by Houston et al. (this volume, 1998), since these authors can only in rare cases cite internal Ch'olan evidence (Ch'olan vowel length can only be internally reconstructed for /a/ : /aa/, not for the whole set of vowels) and since the writing system does not have an alternative way of representing vowel length (some such device corresponding to the vowel-doubling used to represent vowel rearticulation), which the authors might use as direct support for the hypothesis that disharmony does indeed represent vowel length. Thus, Houston et al. (this volume, 1998) rely on comparative linguistic evidence to a much larger degree than in the present study. The two studies are not in conflict, however, but complement each other. With the present study, which demonstrates that preconsonantal /h/ is not indicated by means of harmony rules, all the forms spelled according to Rule 1 that contain preconsonantal /h/ are removed from the list of counterexamples for that rule. These forms number more than a dozen (cf. Table 6.1). Furthermore, with the discovery of a distinction between VV and V', the proposal that VV is indeed represented at all becomes a stronger one, since it makes more precise predictions and is more open to falsification.

TABLE 6.9.1. Complementation of Syllables with Vowel *i*

Morphemic vowel <i>i</i>	Rule 1	Rule 2	Rule 3
Supporting examples	ni-chi, <i>nich</i> ‘flower’ ti-si, <i>tis</i> ‘fart’ wi-ni-ki, <i>winik</i> ‘person’ wi-tzi, <i>witz</i> ‘mountain’ chi-ji, <i>chij</i> ‘deer’	AHIN-na, <i>ahiin</i> ‘cayman’ yi-tz’i-na, <i>i[h]tz’iin</i> ‘younger brother’	chi-ku, <i>chi</i> ’[i]k ‘coatimundi’ 7-si-pu, <i>Huk Si</i> ’p ‘Seven Sins’
Examples involving unknowns	pi-si, <i>pis</i> ‘classifier’ pi-tzi, <i>pitz</i> ‘ballgame’	K’AWIL-la, <i>K’awiil</i> k’u-ti-ma, <i>k’utiim</i>	tz’i-ku, <i>tz’i</i> ’[h]k ‘clay’
Possible counterexamples	K’IN-ni, <i>k’in</i> ‘sun’ (* <i>q’iing</i>) PIK-ki, <i>pik</i> ‘skirt’ (* <i>püik</i>)		

Table 6.9.2. Complementation of Syllables with Vowel *e*

Morphemic vowel <i>e</i>	Rule 1	Rule 2	Rule 3
Supporting examples	che-le-te, <i>chele</i> [h]t ‘placed on’ CHWEN-ne (title)		CH’EN-na, <i>ch’e</i> [e]’n ‘cave’ WE’-la, <i>we</i> ’[e]l ‘meal’ se-ka, <i>se</i> ’[e]k ‘month name’ CHWEN-na (title)
Examples involving unknowns	IX-che-le, <i>Ixchel</i> (deity name)		ka-se-wa ‘month name’ ku-se-wa ‘month name’
Possible counterexamples			

In Tables 6.9.1–5 we have gathered, if not the complete set, at least a large set of spellings that follow the patterns described in our three harmony rules. The tables aim at giving an impression of how well the theory works statistically. It is readily seen that the overwhelming majority of forms are in support of the three rules. We have counted as positive evidence all the spellings whose interpretations under the proposed spelling rules are either verified by internal epigraphic or linguistic evidence or fall out as highly probable judged from comparative linguistic evidence. Some of the spellings listed as counterexamples actually have plausible explanations, as discussed elsewhere in this paper, but we have chosen the perspective of the sceptic in order to not force our interpretations. Even the radical sceptic who does not accept any of our explanations for the counterexamples will admit that neither any writing system nor all scribes are perfect, so a certain amount of inconsistency should be acceptable.

A statistic look at the data listed in Tables 6.9.1–5 quickly reveals that the predictions of all three rules are correct in the great majority of cases. If we exclude examples involving unknowns as well as most forms containing a preconsonantal /h/, which require completely new reconstructions and must thus be evaluated on different terms, and evaluate the remaining data critically such that all the forms listed under “possible counterexamples” count negatively in the statistics (even though many may actually turn out to

TABLE 6.9.3. Complementation of Syllables with Vowel *a*

Morphemic vowel <i>a</i>	Rule 1	Rule 2	Rule 3
Supporting examples	AKAN-na , <i>a[h]kan</i> ‘roaring’ b’a-la-ma , <i>b’a[h]lam</i> ‘jaguar’ ka-ka-wa , <i>kakaw</i> ‘cacao’ ka-na , <i>kan</i> ‘four’ k’a-b’a , <i>k’ab</i> ‘hand’ K’AN-na , <i>k’an</i> ‘yellow’ NAL-la , <i>nal</i> ‘ear of corn’ SAK-ka , <i>sak</i> ‘white’ ya-k’a-b’a , <i>-ak’ab</i> ‘night’	AT-ti , <i>aat</i> ‘penis’ b’a-ki , <i>b’aak</i> ‘bone, captive’ ch’a-ji , <i>ch’aaj</i> ‘drop’ ja-yi , <i>jaay</i> ‘bowl’ ma-xi , <i>maax</i> ‘spider monkey’ MUYAL-li , <i>muyaal</i> ‘cloud’ na-hi , <i>naah</i> ‘house’ pa-ti , <i>paat</i> ‘back’ pa-xi , <i>Paax</i> ‘month name’ ta-ji , <i>taaj</i> ‘bloodletter’ wa-WAJ-ji , <i>waaj</i> yi-cha-ni , <i>-ichaan</i> ‘uncle’ yi-ch’a-ki , <i>-i[h]ch’aak</i> ‘claw’	a-nu , <i>a’n</i> ‘to be, exist’ CHAN-nu , <i>cha’a[n]</i> ‘to own, master’ b’a-ku , <i>b’a’k</i> ‘child’ b’a-tz’u , <i>b’a’tz’</i> ‘howler monkey’
Examples involving unknowns	la-ka , <i>lak</i> ‘plate’ la-ka-ma , <i>lakam</i> ‘banner’ MAK-ka , <i>mak</i> ‘month name’ pa-ka-la , <i>pakal</i> ‘shield’ to-ka-la , <i>tokal</i> ‘cloud’	cha-chi , <i>chaach</i> ‘basket’ ch’a-ti , <i>ch’aat</i> ‘dwarf’ i-ka-tzi , <i>ikaatz</i> ‘office’ MAN-ni , <i>Maan</i> (‘place- name’) mi-ya-tzi , <i>miyaatz</i> ‘wise person’ na-li , <i>naal</i> ‘person’(?)	tza-ku ‘conjurator’(?)
Possible counterexamples	a-ja-wa , <i>ajaw</i> ‘ruler’ (* <i>ajaaaw</i>) CHAN-na , <i>chan</i> ‘sky’ (* <i>cha’n</i>) ya-la , <i>-al</i> ‘son’ (* <i>-aal</i>)	HAB’-b’i , <i>haab</i> ‘year’ (* <i>ha’ab</i>)	

be positive examples under a revised view of the diachronic phonology or be otherwise explainable), we find the following percentages of good examples for each rule: Rule 1: 71.4 percent, Rule 2: 88.0 percent, Rule 3: 84.6 percent. The high degree of correlation between forms spelled according to Rule 3 and forms that have been reconstructed with glottal stops in stages prior to proto-Ch’olan is hard to explain if we assume, as do Houston et al. (this volume, 1998), that *V’ had become *VV by the time of the Ch’olan hieroglyphic inscriptions.

The statistics also reveal a more subtle point that speaks against another hypothesis of Houston et al. (this volume, 1998). They find that there is a relatively larger number of synharmonic spellings that fail to make the right predictions than disharmonic ones and seek to explain this as synharmony being unmarked—in some sense a default spelling

Table 6.9.4. Complementation of Syllables with Vowel *u*

Morphemic vowel <i>u</i>	Rule 1	Rule 2	Rule 3
Supporting examples	ju-lu , <i>jul</i> ‘spear’ su-ju-yu , <i>su[u]juy</i> tu-ku-nu , <i>tukun</i> ‘dove’	ju-ku-b’i , <i>jukuub</i> ‘canoe’ mu-ku-yi , <i>mukuuy</i> ‘dove’ su-tz’i , <i>suutz</i> ‘bat’ tu-ni , <i>TUN-ni</i> , <i>tuun</i> ‘stone’	b’u-la , <i>b’u[u]l</i> ‘bean’ hu-na / <i>HUN-na</i> , <i>hu’n</i> ‘book’ JUN-na , <i>ju’n</i> ‘one’ k’u-la , <i>k’u’l</i> ‘holy’ lu-ma , <i>lu[u]m</i> ‘land’ mu-ka , <i>mu’k</i> ‘omen’ nu-u-na , <i>Nu’n</i> ‘part of name’ u-su-ku-na , <i>-suku’n</i> ‘elder brother’ / sa-ku?-na? , <i>saku’n</i> ‘elder brother’
Examples involving unknowns	ku-yu , <i>kuy</i> ‘owl’ k’u-k’u , <i>k’uk</i> ‘quetzal’ <i>(*q’u’q’)</i> ma-yu-yu , <i>mayuy</i> ‘haze’	u-si , <i>uus</i> ‘mosquito’ <i>(or usii[j]</i> ‘vulture’?)	
Possible counterexamples	ku-tzu , <i>kutz</i> ‘turkey’ <i>(kuutz)</i> u-lu , <i>ul</i> ‘atole’ <i>(*uul)</i> yu-mu , <i>yum</i> ‘father’ <i>(*yuum)</i>	ju-b’i , <i>juub</i> ‘conch’ <i>(jub’)</i> mu-ti , <i>muut</i> ‘bird, omen’ <i>(mut)</i>	tu-pa , <i>tu’p</i> ‘earflare’ <i>(*tuup)</i> yu-ha , <i>-uu’h</i> ‘necklace’ <i>(*uuh)</i>

Table 6.9.5. Complementation of Syllables with Vowel *o*

Morphemic vowel <i>o</i>	Rule 1	Rule 2	Rule 3
Supporting examples	JOL-lo , <i>jol</i> ‘head’	OK-ki , <i>ook</i> ‘foot’ -OTOT-ti , <i>-otoot</i> ‘house’ -ATOT-ti , <i>-atoot</i> ‘house’	ya-xo-o-ka , <i>-(h)o’k</i> ‘valley’ OL-la / <i>o-la</i> / <i>²-o-la</i> , <i>o’[h]l</i> ‘heart’ o-na , <i>o’n</i> ‘many’ wo-o-ja / <i>tu-wo-ja</i> , <i>(-)wo’oj</i> ‘glyph(s)’
Examples involving unknowns	ch’o-ko , <i>ch’ok</i> ‘youth, sprout’	wo-hi , <i>wooh</i> ‘month name’	chi-wo-ja , <i>chiwo’j</i> ‘tarantula’ mo-lo-wa , <i>molo’w</i> ‘month name’
Possible counterexamples			to-k’a , <i>to’k</i> <i>(*took)</i> ‘flint’ no-#-la , <i>noho’l</i> ‘south’

mode—and disharmony being marked—a spelling mode with a narrower range of possible interpretations (cf. their paper for a more lengthy and adequate description of the concept of markedness). In part, they correctly explain the skewed picture of their statistics by reference to the possibility that the orthography may in some cases reflect the shortening of previously long vowels. There are additional sources for the skewing, however, chief among them the incorrect assumption that nuclei involving a preconsonantal /h/ are among the ones indicated by disharmony. The revised statistics made possible by the revised harmony rules do not show synharmonic spellings to produce a greater number of wrong predictions than the disharmonic ones. The number of wrong predictions (28.6 percent) is not significantly higher than that of spellings following Rule 3 (15.4 percent). This means that it is not possible to explain offhand the 28.6 percent “wrong” synharmonic spellings by reference to a markedness theory applied to the writing system viewed as a synchronic whole (cf. below for a different and diachronic explanation for some of the “wrong” synharmonic spellings).

In the evaluation of our theory we see it as important not only in that it makes correct predictions but also in that the predictions are strong. A single generic disharmony rule stating that any disharmonic spelling indicates either the presence of a long vowel or a glottal stop would improve the statistics of “right” as opposed to “wrong” predictions, since the examples where disharmonic spellings in our system predict glottal stops in forms whose traditional reconstructions contain a long vowel (e.g., **to-k’a** ‘flint’) would now count as supporting examples. In fact, for a generic disharmony rule there would be only 5.9 percent counterexamples. But the strength of a hypothesis about such a rule would be very weak compared to the hypothesis advanced in this paper since its predictions could not as easily be falsified. Furthermore, such a hypothesis would largely remove hieroglyphic data from the purview of comparative Mayan phonology since the phonological predictions would be too coarsely grained to be of use for the reconstruction of phonological contrasts.

If the numeric distribution of the nuclei types VV and V’ over the examples listed in Tables 6.9.1–5 is representative of the total hieroglyphic corpus, the percentages of each in this corpus are about equal (we have listed 35 cases of VV and 32 of V’). There are more cases of V (we list 41 examples). These figures speak of both equal and relatively great phonological importances (or “functional loads” in structural linguistic parlance) of vowel length and the glottal stop. It might perhaps be profitable to compare the numeric distribution to that of the extant Mayan languages, such as Yucatec or K’iche’, which have both vowel length and glottal stops. Our feeling is that the relative figures would not be much different, but the exercise of making the actual comparison lies somewhat beyond the scope of this chapter.

Harmony Rules in the Suffix Domain

Throughout this paper we have operated with the implicit assumption that the rules for syn- and disharmony operate with exactly the same force whether a syllabic sign spells part of a lexical morpheme or a suffix. The purpose of this brief section is not to present all the arguments for this hypothesis, only to make it explicit. A full statement is currently being written up (Lacadena and Wichmann, n.d.). An important point that needs to be

made, however, is that we believe the complementation of a morphemic vowel indicates the character of its complexity even when the morphemic vowel is not rendered explicit. To illustrate this, we cite **pu-lu-yi** ‘it burned’ vs. **TZUTZ-yi** ‘it ended’. Both verbs obviously belong to the same verbal category (the mediopassive), and there is little doubt that the same verbal ending is intended in the two cases. We transliterate **pu-lu-yi** as *puluuy*. In this, we slavishly follow Harmony Rule 2, and in this case, as in so many others, there is external linguistic evidence to support the transliteration that is automatically achieved when applying our harmony rules in the suffix domain; in this particular case the vowel-harmonic -VVy suffix can be shown to descend from a pM *-VVr ‘passive’. The reconstruction is due to Kaufman (1986) and is in accordance with the hypothesis of Houston et al. (2000) that the Classic mediopassive comes from an earlier displaced passive. How are we now to transliterate **TZUTZ-yi**? Obviously the same -VVy suffix as in *puluuy* is in play, so we transliterate it *tzutz-[uu]y*, marking the long u-vowel off by means of square brackets as a convention to indicate that this element has been reconstructed. Performing such an operation we have to realize that what we are doing is, in effect, applying the rules of disharmony to an unwritten vowel. The large number of pairs of the type **pu-lu-yi** / **TZUTZ-yi** shows that the Maya scribes always chose a complement vowel that would correctly complement the morphemic vowel had it actually been written. In a manner of speaking, then, the harmony rules operate even in the absence of something to operate on. This gives us a lead when interpreting spellings that combine logograms and syllabic signs even when we are not certain of which vowel is intended. If, for instance, we have **LOGOGRAM+yi** we know that, potentially, the underspelled vowel may be a long /uu/ and also that it cannot be a short /u/ or a glottalized /u’/ (or /uu’/ or /u’u/). A short /u/ would require **LOGOGRAM+yu** and the presence of a glottal would require **LOGOGRAM+ya**. When we list the potential vowels to be reconstructed between a logogram and yi sign we get the following list: /i, ee, aa, uu, oo/. Similar lists may be created in the cases of **Ca** and **Cu** complements yielding the following over-all possibilities:

Morphemic vowel	Complement vowel
/i, ee, aa, uu, oo/	i
/ii, e’, a, u’, o’/	a
/i’, a’, u/	u

The principle that harmony rules also apply to underspelled vowels operates again and again in the hieroglyphic texts and, as we show in Lacadena and Wichmann (n.d.), is of paramount importance for the interpretation and reconstruction of the suffix morphology of the languages represented in the Mayan inscriptions.

A Note on the History of the Spelling Rules

The spelling rules as described in this paper seem to have been operative from a very early date. There are, however, some examples of very early spellings that do not conform to the rules, suggesting that a revolution of the spelling system was not entirely carried through by the Early Classic. An example is the **WING-yi** death expression that is spelled differently as **WING-ya** in the first known example (El Zapote, about 9.0.0.0.0). Thus,

while later forms exhibit a long vowel, earlier forms apparently show a short vowel. This cannot be true, however, since it would contradict the phonological history of vowel length in Ch'olan as we know it.

When looking through the earliest texts we notice that Ca complements dominate the picture, with synharmonic spellings also being prominent. This leads us to suppose that a rule preceding or competing with that of synharmony à la Knorozov was to use the a-vowel as default in complements. During the period leading up to the development of the harmony rules described here, the function of complementation would exclusively have been that of indicating final consonants. As Grube (1990a: 63) has observed, it is remarkable how many of the early complements belong to the nV set of syllabic signs. It is not unlikely that the function of indicating final /n/'s may have been to signal a linguistic identity different from that of Eastern Maya neighbors whose phonology would differ from that of the Pre-Classic ancestors of Ch'olans mainly with respect to proto-Mayan **ng*, which went to /ng/ and later /n/ in Western Mayan and to /j/ in Eastern Mayan.

We believe that the Classic harmony rules were developed using the building blocks of the principles of earlier periods. The competing principles of synharmony and Ca-complementation were each assigned their own function and coordinated into a larger system. Order was created out of chaos, not from scratch. The indicator of when and where this happened is the occurrence of spellings following *both* Rules 2 and 3 at a given site. Because of the scanty number of texts it is not possible to follow the development in detail, but the invention would seem to have happened not long after the beginning of the ninth cycle somewhere in the Peten.

This historical scenario helps us to understand some spellings that are an embarrassment not only to our theory of harmony rules but also to that of Houston et al. (1998). The most prominent cases are **K'IN-ni** 'sun', **CHAN-na** 'sky', and **HAB'-b'a** 'year'. The first comes from pM **q'iing* (or **q'iihng* in Brown and Wichmann 2003), the next from pM **ka'ng* (or **kaa'ng* in Brown and Wichmann 2003), and the last may be reconstructed as either pM **ha'b'* (K&N 1984: 120, #142), **ha'ab'* (Brown 1987), **haa'b'* (Brown and Wichmann 2003) or **ha'aab'*. Thus, all should have complex nuclei although all are written as if they simply contained a short vowel. We suggest that these spellings represent fossilizations of an earlier principle of the writing system, harking all the way back to an "Age of Synharmony." Thus it appears that even the most innovative Maya scribes could not free themselves of tradition when it came to such culturally significant words as 'sun', 'sky', and 'year'.

Recommendations Concerning Transcription and Transliteration

As the reader will have noted, throughout this paper we have excluded the indications of vowel length, glottal stops or preconsonantal /h/'s from transcriptions of logograms. This policy is based on our reasoning that transcriptions should be as uninterpretative as possible and not include features that are not an inherent part of signs but which were indicated by the Maya by means of combinations of signs (i.e., harmony rules). The use of the same logograms to indicate both morphemes that have (either as part of the morpheme or, as in the case of passives of CVC transitives, as morphological infixes) and those that do not have a preconsonantal /h/ speaks against writing preconsonantal /h/'s in the tran-

scriptions. An example of this, mentioned in the beginning of this paper, is **K'AN**, which may correspond either to *k'an* 'yellow' or *k'a[h]n* 'bench, stair', depending on the context. Furthermore, linguistic changes that affect glottal stops or vowel length in certain cases make it impossible to decide whether it is more "correct" to write **V'**, **VV**, or **V**. Thus, a logogram such as the one for 'centipede' is always simply transcribed **CHAPAT** and never **CHAPA'HT**, **CHAPAAHT**, **CHAPAHT**, **CHAPA'T**, or **CHAPAAT**. A transcription such as **CHAPAT** we call a *broad transcription*. The others that include complex features of the syllable nuclei we label *narrow transcriptions*. For any and all purposes broad transcriptions are to be preferred.

For some purposes it may be preferable to use transliterations that directly represent the linguistic forms as written by the Maya rather than transliterations that include reconstructed phonological features such as preconsonantal /h/ and a variety of vowel+glottal combinations in an attempt to recover the full linguistic form underlying the spelling. We call the first, simple, type of transliteration *broad transliteration*; the second, more precise, but also more interpretive, type we designate *narrow transliteration*. Examples of broad transliteration would be *k'ak'* or *to'k'* and examples of narrow transliterations would be *k'a[h]k'* (or simply *k'ahk'*) and *to[o]k'* (or simply *too'k'*).

The narrow transliterations used throughout this paper may falsely have given the impression that the application of the revised theory of disharmony requires a deep knowledge of comparative Mayan phonology. Nothing could be further from the truth. According to our experiences students will need only a couple of hours to become familiar with the spelling rules introduced in this paper. After all, the revised harmony rules are quite simple: synharmony indicates a short vowel, disharmony involving the complement vowel **i** indicates vowel length, and disharmony involving the complement vowels **a** (except **i-a**, which indicates vowel length) or **u** (in the special cases of **i-u** and **a-u**) indicates the presence of a glottal. At the basic level of instruction and in popular textbooks, broad transliterations are recommended. Preconsonantal /h/'s are excluded from such broad transliterations and only three kinds of syllable nuclei are represented: (a) **V**, (b) **VV**, and (c) **V'**, the choice depending on whether (a) Rule 1 (synharmony), (b) Rule 2, or (c) Rule 3 applies.

As a means to render explicit the difference between the broad and the narrow levels (i.e., between simple transliteration and interpretation), the elements introduced at the latter level may be marked off by a square bracket. These square brackets are handy devices, but it should be remembered that they do not alone provide a sufficient means for showing the nature of a specific reconstruction, which may be of three kinds: historical, internal, and paleographical. Preconsonantal /h/'s will usually be reconstructed on the basis of historical information; in some cases, however, they may be reconstructed on the basis of evidence internal to the inscriptions. Thus, in **na-b'i**, *naa[h]b'* 'pool' the /h/ may be reconstructed on the basis of the alternative spelling **NAH-b'i** (Palenque, Temple 18, fallen stuccos; M. Zender, personal communication, March 2000). Moreover, if the word is written as a bare logogram **NAB'**, both vowel length and /h/ must be reconstructed using the internal evidence provided by alternative spellings, and in that case the transliteration would be *na[ah]b'*. Above we mentioned examples of the type **a-ku-la** vs. **a-ku-u-lu**, where a transliteration of the first would include a rearticulated vowel reconstructed on the basis of the explicit orthographic vowel-doubling in the second, alternative spelling.

More often, however, a rearticulated vowel is reconstructed on the basis of historical information, for example, **b'u-la**, *b'u*[u]l 'bean(s)'. A well-known example of paleographical reconstruction (i.e., the reconstruction of partly or fully missing signs), is [b'u]-lu-ku, [b'u]luk 'eleven' from Codex Dresden. Not only are square brackets an insufficient device for rendering different kinds of reconstructions fully explicit but they also fail to be of use in cases where the *absence* of an element is inferred. In the case of the verb **LOK** 'to come out', for instance, a transliteration *lok* in reality represents the reconstruction of a short vowel, since the inscriptions never provide internal evidence for the vowel quantity in the shape of a **k'o** complement. Indeed, for verb roots, complementation of the root vowel is generally absent because syllabic signs will normally be doing the duty of spelling suffixes. To our knowledge there are currently no conventions readily available that might be used to indicate whether the quantity of a short vowel is inferred or attested.

In spite of the above we refrain from introducing new, elaborate notational devices that would serve to render narrow transliterations fully explicit. This is partly because we doubt that overly elaborate devices would gain much popularity and partly because the simultaneous appearance of transcriptions and their transliterations as well as other information in the context will often render the information conveyed by the use of such devices redundant.

Conclusions and Prospects for Future Research

In this paper we have suggested a revision of the harmony rules of the Maya hieroglyphic script as proposed by Houston et al. (this volume, 1998). Crucial to our new proposals is that the spelling rules, as we see them, (1) allow for distinguishing glottalized and long vowels, and, furthermore, (2) that the presence of a preconsonantal /h/ is not indicated by the harmony rules. Most of the evidence for the orthographic rule that requires a glottal stop in the transliteration comes from patterns in the inscriptions themselves and from extant Ch'olan language data. Traditional historical linguistic reconstructions are not fully reliable since they fail to account for many correspondences throughout Mayan languages and the recent revisions of Mayan phonological history have not yet been fully evaluated by the community of historical linguists. Thus, it is an advantage that our proposals build on such reconstruction only to a small degree. Another problem in using reconstructions as the major type of validation is that the Ch'olan hieroglyphic data precede adequately recorded data from other Mayan languages by more than one and a half millennia. They are thus not expected always to fit smoothly into reconstructions based exclusively on extant Mayan language data. Nevertheless, a large measure of agreement is expected and, as we hope to have shown, there is indeed a good deal of agreement. We hope that our research has opened up new avenues toward mutually informed insights into Mayan epigraphy and historical linguistics.

Since our proposal makes very strong and precise predictions about the phonological shapes of the words recorded in the Maya script each identification of new vocabulary items or spelling variants⁸⁶ will serve as a test of its adequacy. At the same time, it is hoped

86. An example of a newly identified spelling variant confirming our predictions has been provided to us by Christian Prager after the completion of this paper (personal communication, 2002), Prager has

that the theory will be an aid to epigraphers in their efforts to produce new decipherments. As an example of a case where the theory has already been instrumental in this regard, we cite the case of **b'a-ku**, *b'a'k* 'child', an identification made by Marc Zender (personal communication to the authors, October 2000) precisely under the influence of the theory presented in this paper. The prediction that a glottal would be present helped Zender narrow in on the identification, since it excluded so many other readings based on attestations in Mayan languages that would potentially be of relevance.

A great deal of our research concerning the application of our spelling rules to the suffix domain has not been presented in this paper. Part of our reason for postponing this to another paper is that the discussion of the suffix domain involves debating the existence or nonexistence of a special category of signs, so-called morphosyllables (Houston et al. 2000: 347, 2001), that are said to block harmony rules, an issue which is orthogonal to the issue of the structure of the harmony rules themselves. In a future publication we shall elaborate on our reason to believe that the range of harmony rules does extend past the lexical domain.

Another large area of research that has only been touched upon briefly is the development of the spelling rules. While the idea of a logosyllabic script is likely to have been innovated and to have spread so quickly that a retrospective eye would fail to trace its course of development, we believe that the harmony rules—even if the result of a sudden innovation, a “punctuated equilibrium” in the sense of Gould and Eldredge (1977)—were not yet firmly fixed in all areas of the Maya lowlands by the Early Classic. Before the rule of synharmony and the rules of disharmony were in place and universally accepted there were other rules, perhaps several competing ones, governing the choices of syllabic signs in complement function.

Finally, the question arises why, among the world's early writing systems, the Maya script developed the possibility of representing speech with such a remarkable phonological adequacy that even most modern alphabetical systems shrink in comparison. This question, we think, is ultimately of a sociolinguistic nature. There are ways to address it, in particular by studying the correlation between degrees of phonological precision in texts from a given site and the type of sociopolitical and linguistic situation that may be assumed to have characterized the site. It is not impossible that the ultimate driving force toward achieving phonological precision is language contact. We expect that future research will reveal whether or not such an explanation is viable.

found a new spelling of the word “hummingbird” at Pusilha. It is embedded within the name of a local ruler, **SAK-tz'u-nu-na**. According to our suggested rules, the name would read *Sak Tz'unu'un* ‘white hummingbird’. This example, which is exceptional in the glyphic corpus, provides a full syllabic spelling of ‘hummingbird’, otherwise attested as **tz'u-nu** or **tz'u-'nu**. The pattern **u-a**, suggesting the presence of a glottal stop, is nicely confirmed by the proto-Maya reconstruction *tz'uunu'n (K&N 1984: 134).

APPENDIX

Data

Below, all glyphic forms cited in the paper are repeated, with information about spelling variation, suggested transliteration, selected references to sources for glyphic attestations (for lesser-known and/or rare forms), translations, relevant attested linguistic cognates, reconstructions, and, for recent or not widely known readings, references to sources for the glyphic identifications (applications of generally accepted sign values in the identification of new words) or decipherments (identifications of new readings of individual signs involved in the spellings). In the citations of language data we generally retain the original orthographies; Wisdom (1950b) is an exception—his forms are usually converted to the Academia Maya orthography. We use the convention of square brackets to indicate phonemes that are not represented in a particular spelling, but which must be reconstructed using the evidence from audially or alphabetically recorded relevant Mayan languages. The distinction between /h/ and /j/ is due to Grube (personal communication to us, July 1999, and this volume). When referring to Classic Maya sites we use the abbreviations of the Corpus of Maya Hieroglyphic Inscriptions (Graham 1975: 23–24). We do not necessarily indicate all the places where a given form is attested, and if it is very frequent or well known, we do not make any references.

AHIN-na, *ahiin* ‘cayman’, cf. KEK *aahiin* ‘alligator’ (Campbell 1971: 199), POM *ah(y)iin* ‘alligator’ (Campbell 1971: 199), TZE *abyín* ‘lagarto’ (Slocum and Gerdel 1965), CHL *ajin* ‘cocodrilo de pantano, cocodrilo de río, jicotea’ (Aulie and Aulie 1978: 28), *ajin* ‘lagarto’ (Schumann 1973: 75), *ajin* ‘alligator, largarto’ (Josserand and Hopkins 1988b), CHN *äjin* ‘lagarto, caimán; cocodrilo’ (Keller and Luciano 1997: 36), CHR *aijn* ‘alligator, large lizard, giant lizard spirit (lagarto)’ (Wisdom 1950b), CHT <*ahin*> / <*ain*> ‘lagarto’ (Morán 1695: 133), YUC *’áayin* ‘alligator’ (Bricker et al. 1998: 6), MOP *ayin* ‘lagarto, cocodrilo’ (Schumann 1997: 254), ITZ *’ayim* ‘crocodile’ (Hofling and Tesucún 1997: 154), HUA *ájin* ‘lagarto, alligator’ (R. Larsen 1955) < pM **ahyiin*. K&N (1984: 115, #005) reconstruct pM **ahiin*, while the **ahyiin* reconstruction was worked out by Marc Zender and us, based on data, the most important of which is cited above, in personal communication during June 2000. In the absence of fully syllabic spellings it is difficult to say whether the glyphic form should be transliterated *ahyiin* or *ahiin*. The Ch’olan linguistic evidence supports the latter.

a-ka / **AK** *a[h]k* ‘turtle’ [TNA], cf. CHL *ajc* ‘tortuga negra’ (Aulie and Aulie 1978: 28), *ajk* ‘turtle, tortuga’ (Josserand and Hopkins 1988b), *ajk* (*sic!*) ‘tortuga grande’ (Schumann 1973: 75), CHN *ac* ‘tortuga’ (Keller and Luciano 1997: 3), YUC *áak* ‘turtle’ (Bricker et al. 1998: 2), *áak* ‘tortuga’ (Bastarrachea et al. 1992: 77), MOP *aak* (Schumann 1997: 254), *aac* (Ulrich and Ulrich 1976: 19), ITZ *’aak* (Hofling and Tesucún 1997: 160) < WM+YUC **abhk* (K&N 1984: 115, #009) or pM **ahq* (Brown and Wichmann 2003). The identification of the spelling **a-ka** on the Tonina stucco frieze (e.g., Martin and Grube 2000: 185) as part of the name of a death god, ‘Turtle-Foot Death’, was first made by Stu-

art, who notes that “[t]his unusual name is explained by the turtle shells on the feet of his portrait” (Stuart 1998: 394, n. 11).

AK-la, *a[h]k[u]’[u]l* [PAL] / **a-ku**, *a[h]ku’[ul]* [ARP, NTN] / **a-ku-la**, *a[h]ku’[u]l* [CML] / **a-ku-u-lu**, *a[h]ku’ul* [K4169] ‘turtle-place’. This is a common expression in toponyms and anthroponyms formed by *abh* ‘turtle’ and an *-u’l* suffix. Late forms of this expression at Bonampak and Yaxchilan appear with loss of glottalization in the suffix, as **AK-lu**, *a[h]k[u]l* or **a-ku-lu**, *a[h]kul*. For an extended discussion see Lacadena and Wichmann (n.d.).

AKAN-na / **a-AKAN**, *a[h]kan* ‘roaring’, also spells *Abkan*, a deity name (God A’). Cf. CHL *ajcän* ‘gemido’ (Aulie and Aulie 1978: 28), CHR *ajkna’r* ‘gemido, quejido, lamento’ (Pérez et al. 1996: 4), *ajkna* ‘gemir’ (Pérez et al. 1996: 5), YUC *áakan* ~ *áakam* (n1) ‘groan’, (ap) ‘groan’ (Bricker et al. 1998: 2), *áakan* ‘lamento, quejido, bramido; quejarse, bramar, gemir’ (Bastarrachea et al. 1992: 77), ITZ *akan* ‘bramido/roar; bramar, rugir/bellow, roar’ (Hofling and Tesucún 1997: 145–46). The preconsonantal /h/ is suggested by Ch’olan data and its reflexes in Yucatec; Ch’ol and Yucatec data confirm that the second /a/ is short, as indicated by the synharmonic complementation to the logogram. The decipherment of the name of God A’ is due to D. Stuart (personal communication, 2000) and Grube (2000).

a-mu-chi, *a[j]muuch* ‘(male) toad’ (part of a name) [K5164, Kerr 1989–2000], cf. CHN *ixmuch* ‘sapo, rana’ (Keller and Luciano 1997: 121–22), CHL *ix-much* (Schumann 1973: 81), CHT *abmuch* ‘sapo’ (Morán 1695), YUC *mùuch* ‘toad, frog; trichinosis’ (Bricker et al. 1998: 188), *muuch* ‘sapo, rana’ (Bastarrachea et al. 1992: 106), ITZ *much* ‘sapo/toad’ (Hofling and Tesucún 1997: 453), MOP *ya’ax much* ‘rana verde’ (Schumann 1997: 253), *much* ‘sapo’ (Schumann 1997: 271) < LLxGrTze *#amooch* (possibly diffused, according to K&N 1984: 126, #328).

AN-nu / **a-nu**, *a’n* ‘be, exist’, cf. CHL *an* ‘hay’ (Aulie and Aulie 1978: 29), *an* ‘there is, there are; hay’ (Josserand and Hopkins 1988b), *añ-öch* ‘hay’ (Schumann 1973: 76), CHN *ajne* ‘asistir; ir (habitualmente); estar (tiempo pretérito y subjuntivo); haber (pretérito y subjuntivo)’ (Keller and Luciano 1997: 20), *ayan* ‘haber; estar; tener’ (Keller and Luciano 1997: 33), *ya’an* ‘haber; estar; tener’ (Keller and Luciano 1997: 294), CHN-a *an-el* ‘existir’ (Smailus 1975: 128), *ya(a)n* ‘hay, hubo’ (Smailus 1975: 177), CHT *aya*, *ayan* (Morán 1695: 82), CHR *ani* ‘era’ (Pérez et al. 1996: 12), YUC *mina’an* ‘there isn’t any’ (Bricker et al. 1998: 185), MOP *yan* ‘existe, hay’ (Schumann 1997: 287). ‘Be, exist’ is very irregular in lowland languages making reconstructing this item difficult, but support for the glottal suggested by the glyphic spelling is found in Chontal (*ya’an*) and Yucatec (in the negative form *mina’an*).

a-pa-a-la, *A[j]-Pa’al* ‘he of Pa’al’. Probably analyzable as *aj-pa’-al*, where *aj-* is the well-known agentive prefix, *pa’* is a noun meaning ‘creek, stream, lagoon’, and *-al* is a suffix used in toponymic constructions with the meaning ‘abundance of’. The place-name *Pa’al* would then mean ‘abundance of creeks/streams’. The form *pa’* as ‘creek, stream, lagoon’

is attested in CHN *pa* ‘arroyo, laguna, popal, lago’ (Keller and Luciano 1997: 183) and CHL *pa* ‘arroyo’ (Aulie and Aulie 1978: 91; Josserand and Hopkins 1988b), and in Classic inscriptions, such as **TI’-pa-a**, *Ti’pa* ‘river-shore’, the place where the Naranjo ruler Itzamnaaj K’awiil was born (see Stuart and Houston 1994: 23 and fig. 24c for the identification of the place-name clause).

AT-ti, *aat* ‘penis’, cf. CHL *at* ‘penis, pene’ (Josserand and Hopkins 1988b), *at* ‘pene’ (Schumann 1973: 76), *tun’at* ‘testículos’ (Aulie and Aulie 1978: 115), *yat* ‘testículos’ (Aulie and Aulie 1978: 142), ITZ *yach* ‘agujón, pene de niño/stinger, pincher, small boy’s penis’ (Hofling and Tesucún 1997: 684), MOP *ach* ‘penis’ (Schumann 1997: 253), YUC *àach* ‘spur, goad, sting; tip, tendril’ (Bricker et al. 1998: 1) < pM **aaty* (K&N 1984: 116, #029, and Brown and Wichmann 2003).

a-u-ku / **a-u-ku-la**, *a[j]uku’[u]l*, *aj-Uku’[u]l* [YAX]. The form is composed of *aj-* ‘agentive’, *uk* a morpheme with unknown meaning, and *-u’ul* the same suffix as in *a[h]ku’ul* (cf. above).

b’a-ku, *b’a’k* ‘child’, cf. YUC <*ah baak*> ‘niño, muchacho’; <*ix baak*> ‘niña’ (Barrera Vásquez 1995: 27). This is attested on YAX L. 18 (B5) in a sequence where it occupies the same position as *ch’ok* ‘sprout, youth’ titles in the structure of the text, as well as on several vessels (e.g., K531, K1152, K2041, Kerr 1989–2000), again in positions that suggest a title (M. Zender, personal communication to fellow epigraphers October 10, 2000). The doubled letters of the Yucatec source are not completely certain evidence for glottalization, but very often doubled letters in the colonial sources do correspond to V’V in modern ones.

B’AK-ki / **b’a-ki**, *b’aak* ‘bone; captive’, cf. CHL *bac* ‘hueso’ (Aulie and Aulie 1978:30), *bak* ‘bone; hueso’ (Josserand and Hopkins 1988b), CHN *bac* ‘hueso; flaco’ (Keller and Luciano 1997:42), CHT <*bac*> ‘gueso’ (Morán 1695: 119), CHR *b’ak* ‘hueso, esqueleto, calavera’ (Pérez et al. 1996:17), YUC *b’àak* ‘bone’ (Bricker et al. 1998: 24), *baak* ‘hueso’ (Bastarrachea et al. 1992:79), ITZ *b’ak* ‘hueso/bone’ (Hofling and Tesucún 1997:162-163), MOP *bak* ‘hueso’ (Schumann 1997: 254) < pM **b’aaq* (K&N 1984: 116, #37) or **b’aahq* (Brown and Wichmann 2003). The spelling **u-b’a-ku** on the Dzibilchaltún bone spatula (Taschek 1994: fig. 36b) presumably is an underspelling, where a *-uC* suffix is intended.

B’ALAM-ma / **b’a-la-ma**, *b’a[h]lam* ‘jaguar’. Cf. CHN *baläm* ‘tigre, puma, tigrillo, jaguar’ (Keller and Luciano 1997:39), CHL *bajlum* ‘jaguar’ (Josserand and Hopkins 1988b), *bajlun* ‘tigre’ (Schumann 1973:76), *bajlum* ‘tigre, jaguar’ (Aulie and Aulie 1978:30), CHT *bahlan* ‘tigre’ (Morán 1695:167), CHR *b’ajram* ‘onza’ (Pérez et al. 1996: 16), MOP *baalum* ‘tigre’ (Schumann 1997:254), ITZ *b’alum* ‘tigre/jaguar’ (Hofling and Tesucún 1997: 164), YUC *b’áalam* ‘jaguar; Balam [surname]; beetle’ (Bricker et al. 1998: 26), *báalam* ‘jaguar’ (Bastarrachea et al. 1992:79) < pM **b’ahlam* (K&N 1984: 116, #044).

b’a-tz’u, *b’a’tz’* ‘howler monkey’, cf. CHL *batz’* ‘howler monkey; zaraguate’ (Josserand and Hopkins 1988b), *batz’* ‘zarahuato, mono aullador’ (Schumann 1973: 76), *bats’*

‘mono’ (Aulie and Aulie 1978: 31), CHT *batz* ‘mono barbado’ (Morán 1695: 137), ‘mono de gueguecho’ (Morán 1695: 141) < pCh **batz*’ (K&N 1984: #045); YUC *b’aatz* ‘howler monkey’ (Bricker et al. 1998: 24), *baats* ‘saraguato, mono aullador’ (Bastarrachea et al. 1992: 79), ITZ *b’aatz* ‘mono aullador/howler monkey’ (Hofling and Tesucún 1997: 172), LAC *ba’tz* ‘sarahuato’ (Canger 1970), MOP *baatz*’ (Schumann G. 1997: 254), CHU *ba’atz* ‘day name’ (J. Maxwell, personal communication to Houston et al. 1998: 283), TZU *b’aatz* ‘día tz’utujil Batz’ (Pérez and Hernández 1996) < pM **b’a’tz*’ (K&N 1984: 116, #046) or **b’aa’tz*’ (Brown and Wichmann 2003).

b’o-b’o, *b’o[h]b* ‘coyote’. Cf. CHR *b’ohb* ‘coyote’ (Pérez Martínez et al. 1996: 26), ITZ *b’oo* ‘fiera como león de Africa/lion-like beast’ (Hofling and Tesucún 1997:187). The loss of final /b/ in Itzaj is due to a regular sound change. The spelling **b’o-b’o** could conceivably yield *b’ob* ‘flower’, cf. CHL *bob* ‘banana flower; la flor del plátano’ (Josserand and Hopkins 1988b), *bob* ‘flor’ (Aulie and Aulie 1978: 32), but we discard this possibility because Yucatec has evidence for a long vowel, cf. YUC *b’òob* ‘*Coccoloba spicata* Lundell. A small tree whose leaves are used for wrapping large tamales and its straight slender trunks are used in house construction; henequen plant with inflorescence’ (Bricker et al. 1998: 33), *boob* ‘bases secas de las hojas de henequén; vástago floral de los agaves; nombre de una poligonácea’ (Bastarrachea et al. 1992: 80).

b’u-ku, *b’u[h]k* ‘clothes’, cf. CHL *bujc-äl* ‘camisa’ (Aulie and Aulie 1978: 33), *bujk* ‘shirt; camisa’ (Josserand and Hopkins 1988b), CHN *buc* ‘blusa, ropa, vestido, camisa’ (Keller and Luciano 1997: 47), CHT <buc> ‘ropa’ (Morán 1695: 161), CHR *bujk* ‘tela, ropa’ (Pérez Martínez et al. 1996), ‘clothes, cloth, clothing, piece of cotton weaving’ (Wisdom 1950b), MOP *buuk* ‘cobija’ (Schumann 1997: 255), ITZ *b’uuk* ‘colcha, sábana/blanket, bedspread, sheet’ (Hofling and Tesucún 1997: 190), YUC *b’úuk* ‘clothes, roof [thatch]’ (Bricker et al. 1998: 37), *búuk* ‘ropa’ (Bastarrachea et al. 1992:81) < pM **b’uhq* ~ **b’u’q* (K&N 1984: 117, #059).

b’u-la, *b’u[u]l* ‘bean(s)’ [K2914, Kerr 1989–2000], cf. CHL *b’u’ul* ‘frijol’ (Aulie and Aulie 1978: 33), *bu’ul* ‘bush bean; frijol (de suelo)’ (Josserand and Hopkins 1988b), CHN *b’u’u* ‘frijol’ (Keller and Luciano 1997: 50), CHT <bul> ‘frisol’ (Morán 1695: 115), CHR *b’u’ur* ‘bean(s)’ (Wisdom 1950b: 23) < pCh **b’u’ul*; MOP *b’u’ul* ‘frijol de suelo’ (Schumann 1997: 225), ITZ *b’u’ul* ‘frijol/beans’ (Hofling and Tesucún 1997: 190), YUC *b’ú’ul* ‘beans, cyst’ (Bricker et al. 1998: 38), *b’u’ul* ‘frijol’ (Bastarrachea et al. 1992: 81), LAC *b’u’r* (Canger 1970) < LL **bu’ul* (K&N 1984: 117, #057).

[b’u]-lu-ku, *b’uluk* ‘eleven’, cf. CHL *buluch* ‘once’ (Aulie and Aulie 1978: 34), *bulux p’e* ‘eleven; once’ (Josserand and Hopkins 1988b), ITZ *b’uluk* ‘once/eleven’ (reconstructed, not in use) (Hofling and Tesucún 1997: 188) < LL+GrTz **b’uluky* (K&N 1984: 138, #673, who hypothesize that this is a combination of ‘nine’ and ‘two’).

cha-b’i, *chaab* ‘honey’ [CPN Peccary Skull], cf. CHL *chab* ‘miel’ (Aulie and Aulie 1978: 46), *chab* ‘bee; abeja, colmena’ (Josserand and Hopkins 1988b), *chab* ‘miel, colmena, abeja’ (Schumann 1973: 77), CHN *chab* ‘dulce, caramelo; miel’ (Keller and Luciano 1997:

75), *cha* ‘dulce, caramelo, miel, panela’ (Keller and Luciano 1997: 77; a variant of *chab*), CHN-a *chab* ‘miel, cera’ (Smailus 1975: 134–35), CHT <*castilan chab, ochab*> ‘asucar; i todo dulce’ (Morán 1695: 81), *yatzam chab* ‘miel que cuaja’ (Morán 1695: 140), CHR *chab* ‘panela, miel, colmena, abeja’ (Pérez et al. 1996: 30), ‘dulce’ (Pérez et al. 1996), YUC *kàab* ‘honey [purchased]; beehive’/‘honey [cultivated]; bee’ (Bricker et al. 1998: 118), *kaab* ‘abeja; miel’ (Bastarrachea et al. 1992: 94), ITZ *kab* ‘miel, jarabe, colmena/honey, syrup, hive’ (Hofling and Tesucún 1997: 332), MOP *kab* ‘abeja; miel’ (Schumann 1997: 262) < pM **kaab*’ (K&N 1984: 117, #069, and Brown and Wichmann 2003).

cha-chi, *chaach* ‘basket’ [K2940, Kerr 1989–2000], cf. CHR *chajchib* ‘colador’, YUC *x cháachab* ‘sieve, colander’ (Bricker et al. 1998: 58). Glyphic identification by Houston et al. (1998: 279).

cha-hu-ku NAH, *chahuk nah* ‘lightning house’ [PNG, Throne 1, Leg]. For the glyphic identification, cf. Grube et al. (1991: 112). *Chahuk* is an archaic or dialectal form of the same morpheme as *chaa[h]k*, for cognates cf. the listing in the next entry and for more discussion cf. Wichmann (2002).

CHAK-ki, **cha-ki**, *chaa[h]k* ‘rain, the rain god’ [Dresden 5b]. Cf. CHL *chajk* ‘rayo (se cree que defiende a las colonias de espíritus malos)’ (Aulie and Aulie 1978: 46), *chajk* ‘lightning; rayo’ (Josserand and Hopkins 1988b), *chajk* ‘rayo’ (Schumann 1973: 46), CHN *chawäc* ‘trueno’ (Keller and Luciano 1997: 76), CHT <*chahac*> ‘rayo’ (Morán 1695: 161), CHR <*c’ahk*> (Wisdom 1950b: 713) < pCh **chahwak* (Wichmann 2002), MOP *chaak* ‘rayo’ (Schumann 1997: 256), *chaac* ‘trueno’ (Ulrich and Ulrich 1976: 68), ITZ *chaak* ‘trueno, rayo, relámpago/thunder, lightning’ (Hofling and Tesucún 1997: 199), YUC *cháak* (Bricker et al. 1998: 61), *cháak* ‘lluvia’ (Bastarrachea et al. 1992: 83), *kawak* ‘decimosexto día en la serie de veinte días que tenían los indios para formar el mes’ (Barrera Vásquez 1995: 305 citing the *Diccionario de San Francisco*), TOJ *chawuk* ‘rayo, relámpago, trueno, hombre-rayo, aguacero, tormenta’ (Lenktersdorf 1979), TZE *chawuk* ‘thunder’ (Oxchuc dialect from Slocum 1953), *st’ohmel chahwuk* ‘thunder’ (Bachajón dialect from Slocum and Gerdel 1965), TZO *chaúk* ‘lightning and thunder’ (Laughlin 1975) < pM **kahwuq* (Wichmann 2002).

CHAN-nu, *cha’[a]n* ‘to own, master’ or *cha’n* ‘to watch over’; for the first possibility cf. CHL *cha’an* ‘master, owner; dueño’ (Josserand and Hopkins 1988b), and *cha’an-in* ‘adueñarse’ (Aulie and Aulie 1978: 46); for the second possibility cf. CHN *chanä*, *chänen* ‘ver, mirar, observar; fijarse en’ (Keller and Luciano 1997: 81), CHL *chañäl* ‘mirada’ (Aulie and Aulie 1978: 47), MOP *cha’an* ‘mirar’ (Schumann 1997: 256), *cha’anbi* ‘fue vistola’, *cha’anbül* ‘ser mirado/a, ser visto/a’, *cha’antic* ‘ver, mirar’ (Ulrich and Ulrich 1976: 69), YUC *chá’an* ‘spectacle, show, pageant’, and *chá’an-t* ‘behold, view, look on, enjoy’ (Bricker et al. 1998: 64). We prefer the second option and translate the “captor-of” expression, **u-CHAN-nu** / **u-cha-nu**, *ucha’n* as ‘the watcher or supervisor of, the one who watches or supervises someone or something’. The variant spelling **CHAN-na**, *chan* [ITN, IXZ, MQL] attests to a stage in the Classic times where the glottal has become lost, so the *cha’an* ‘to own, master’ meaning in Ch’ol is not possible, since there is a glottal in the

modern form. However, *chan* ‘to watch, watch over, watching, supervision’ fits with the modern Ch’olan data where the glottal is lost and with the Yucatecan item that shows that a glottal was really there.

CHAPAT-tu [CPN, Altar to St. 13; the stela has a 9.11.0.0.0 date = A.D. 652] / **cha-pa-tu** [RAZ, Tomb 19, Vessel; tomb dates to ca. A.D. 460-480, cf. Hall et al. 1990: 141] *chapa[a]’ht* ‘centipede’ cf. CHR *chapajt* ‘insect said to resemble the centipede’ (Wisdom 1950b: 28), CHL <*chapaht*> ‘cientopías, gusano largo y delgado’, YUC *chapat* ‘ciempiés’ (Bastarrachea et al. 1992: 82), (*ah*) *chapat* ‘ciempiés’ (Barrera Vásquez 1995: 84) (decipherment by Erik Boot 1999b). This is probably derived from a form **chap* ‘to coil’ plus a nominalizing suffix, cf. TZO *chap* (n) ‘long coil’, (vrefl) ‘coil (snake, etc.)’, *chapahtik* (adj) ‘ready (things)’, MAM *chap* ‘candado’, JAC *chap* ‘cangrejo’. Phonologically changed forms as represented by the spellings **cha-CHAPAT-ti**, *chapaa[h]t* [Carved Brown Vase ware, CPN, published in Longyear 1952: fig. 103d’ and estimated by Dorie Reents-Budet, personal communication to us, January 2001, to date to the eighth century] and **cha-pa-ta**, *chapa[h]t* [K1256, Kerr 1989–2000, estimated by Dorie Reents-Budet, personal communication to us, January 2001, to date to around A.D. 725].

che-e-na / **che-he-na**, *che’en* ‘it is said’, cf. pCh **che* ‘dice, etc./quotative particle’ (K&N 1984: 139, #709), CHL *che’en* ‘así dice (al repetir lo que había dicho otra persona, termina con *che’en* ‘así dice’), *che’et* ‘así debes decir (al enviar a una persona con un mensaje, termina la orden con la expresión *che’et* así debes decir’, *che’ob* ‘así dicen (terminación)’ (Aulie and Aulie 1978: 47-48), CHN *che* ‘así’ (Keller and Luciano 1997: 89), *che’en* ‘así’ (Keller and Luciano 1997: 89), CHR *che* ‘decir’ (Pérez Martínez et al. 1996: 38), *cheen* ‘I said’ (Wisdom 1950b), CLT *che* ‘dice’ (Morán 1695: 25). Glyphic identification by D. Stuart (personal communication, 1997 and 1999) and Grube (1998).

che-b’u, **che-e-b’u**, *che’ebb* ‘quill’, cf. CHL *chejp* ‘bambú (planta)’ (Aulie and Aulie 1978: 47), *chejboy* ‘lugar donde hay mucho bambú’ (Aulie and Aulie 1978: 47), *Chejopa* ‘lugar de bambú a la orilla del agua, nombre de una ranchería (Aulie and Aulie 1978: 47), *Che’opa* ‘arroyo de bambú, nombre de una colonia’ (Aulie and Aulie 1978: 48), YUC *cheeb* ‘pluma o péndola, aderezado para escribir y pincel [de pintura] de pintor’ (Barrera Vásquez 1995: 86). Glyphic identification by Boot (1997).

che-le-te, *chele[h]t* (or *che[’]le[h]t*) ‘placed on’. Cf. CHR *che’r* ‘mal tejido, encaramado, montado’ (Pérez Martínez et al. 1996: 40). Occurs in the epithet *cheleht chan k’ihnich* ‘The Hot One is placed on high’. The suffix is probably the same as in ‘centipede’ (see above); the particular example would correspond to the same stage of phonological development as **cha-pa-ta**, *chapa[h]t*.

chi-ji, *chij* ‘deer’, cf. CHL *chijmay* ‘venado común’ (Aulie and Aulie 1978: 48), *chij-may* ‘cabro’ (Schumann 1973: 78), CHR *chij* ‘mula, burro, potro, bestia, caballo’ (Pérez Martínez et al. 1996: 41), CHN *chimay* ‘venado’ (Keller and Luciano 1997: 92), MOP *queej* ‘venado’ (Ulrich and Ulrich 1976: 175), ITZ *keej* ‘venado/deer’ (Hofling and Tesucún 1997: 347), YUC (*h*) *kéeh* ‘deer; Ceh [surname]’ (Bricker et al. 1998: 125), *kéej*

‘venado’ (Bastarrachea et al. 1992:95) < pM **kehj* (K&N 1984: 118, #084; Brown and Wichmann 2003).

chi-ku, *chi*’[i]k ‘coatimundi’, cf. CHT <chiic> (Morán 1695), MOP *chi*’ik ‘tejón, pizote (coatí)’ (Schumann 1997: 257), ITZ *chi*’ik ‘pizote/coatimundi’ (Hofling and Tesucún 1997: 208), YUC *h chi*’ik ‘coati mundi *Nasua narica yucatanica*’ (Bricker et al. 1998: 70), *chi*’ik ‘tejón, coatí, pizote’ (Barrera Vásquez 1995: 97, Bastarrachea et al. 1992: 84). Houston et al. (1998) transliterate this as *chihk*, but the attested forms rather call for *chi*’k. (A vague possibility exists of a relation to CHN *ajchiku* ‘mapache’ [Keller and Luciano 1997: 13]; if **chi-ku** spells *chiku* it is obviously no longer a valid example).

chi-wo-ja / **chi-wo**, *chiwo*’j ‘tarántula’, cf. CHL *chiw-oj* ‘tarántula’ (Schumann 1973:78), *ch’iwo*’ [sic!] ‘tarántula; tarántula’ (Josserand and Hopkins 1988b), CHN *ajchiwo*’ ‘araña’ (Keller and Luciano 1997: 13), MOP *chiwoj* ‘tarántula’ (Schumann 1997: 257), ITZ *chiwoh* ‘tarántula/tarántula’ (Hofling and Tesucún 1997: 207), YUC *x chiüwoh* ~ *x chiüwol* ‘tarántula’ (Bricker et al. 1998: 71), *chiwoj* ‘tarántula’ (Bastarrachea et al. 1992:83). The form may have been borrowed into Yucatecan (after the loss of the glottal stop), since Yucatec has the alternative form *kowoj* ‘tarántula’ (Bastarrachea et al. 1992: 96).

CHWEN-na, *chwe*’n ‘?’ (part of a title at Naranjo, cf. St. 12, B4, G14; St. 35, F6, F11). Contemporaneously (9.18.10.0.0 or A.D. 800) attested as **CHWEN-ne** on NAR, St. 8, B7, E2, and F9. The latter spelling would reflect the current pronunciation *chwen* and the former an earlier pronunciation, *chwe*’n, from the time before the glottal stop was lost.

ch’a-b’a, *ch’a*[h]b’ ‘fasting’, cf. CHL *ch’abb*’ ‘dieta, en ayunas; diet, fast’ (Josserand and Hopkins 1996, 1998b), *ch’ajb* ‘ayunar, ayuno’ (Schumann 1973: 79), YUC *ch’ab*’ ‘hacer abstinencia’ (Barrera Vásquez 1995: 120), TZO *ch’ob*’ ‘to fast’ (Laughlin 1975), CHU *k’ajb*’ (vt) ‘ayunar, ir sin comer, pasar mucho tiempo’, (vi) ‘sufrir por hambre, tener mucha hambre’ (Diego 1998), KAN *k’ajb’ank’ulal* ‘ayuno, en ayunas’ (Diego Antonio et al. 1996) < pM **k’ajb*’ ‘fast’ (noun) (Brown and Wichmann 2003).

ch’a-ji, *ch’aaj* ‘drops’, cf. ITZ *t’aj* ‘gota/drop’ (Hofling and Tesucún 1997: 614); the source also has *ch’aj* ‘gota, caída de gotas/drop, dripping’ (Hofling and Tesucún 1997: 221) but this appears to be a loan from Ch’olan, YUC *t’áah* ‘drip; drop, bit’ (Bricker et al. 1998: 288); again, there is an alternative form that seems to be a loan: *ch’áah* ‘drop’ (Bricker et al. 1998: 78). The identification of the last consonant as /j/ rather than /h/ is based on the Mam cognates *ch’ajat* ‘chapotear el agua, regar demasiado agua en el suelo’ and *ch’aj ch’aj* ‘tic tic: ruido de gota de agua’ (Maldonado et al. 1986).

ch’a-ti, *ch’aat* ‘dwarf’ [YAX HS 2, VII, W1], cf. YUC (*ah*) *k’at* ‘enano’ (Barrera Vásquez 1995: 384), SAC *ch’äten* ‘small’ (Kaufman 1976b). Glyphic identification by S. Houston, cf. Miller and Houston (1987).

CH’EN-na, *ch’e*’n ‘cave, burial’ [numerous attestations, from TIK St. 31 to Codex Dresden, 24], cf. CHL *ch’en* ‘cueva, hueco hondo’ (Aulie and Aulie 1978: 53), *ch’en* ‘hole;

hoyo, cave; cueva' (Josserand and Hopkins 1988b), *ch'en tun* 'cueva' (Schumann 1973: 79), *ch'eñ-al* 'sepultura' (Schumann 1973: 79), CHN *ch'en* 'pozo' (Keller and Luciano 1997: 101), CHT <*chen*> 'cueva, hoyo' (Morán 1695: 96), <*chen tum*> 'pedregal, peñasco' (Morán 1695: 152), <*chen tun*> 'piedra' (Morán 1695: 152), CHR *ch'en* (Pérez et al. 1996: 54), MOP *ch'e'en* 'barranca; hoyo; hueco, pozo; sepultura' (Schumann 1997: 258), ITZ *ch'e'em* 'cueva/cave', *ch'e'emil maak* 'sepultura de gente' (Hofling and Tesucún 1997: 224), YUC *ch'é'en* 'well' (Bricker et al. 1998: 82), *ch'e'en* 'pozo' (Bastarrachea et al. 1992: 85) < pM **k'e'n* (K&N 1984: 119, #113) or **k'ee'n* (Brown and Wichmann 2003) (decipherment: Stuart et al. 1999b: vol. 2, pg. 15). A phonologically changed form represented as CH'EN-ni is found at YAX L. 26 at 9.14.14.13.17.

ch'o-ko, *ch'ok* 'young', cf. CHL *ch'oc aläl* 'criatura', *ch'oc bu'ul* 'frijol tierno', *ch'oc to* 'verde todavía', *ch'oc'an* 'nacer' (Aulie and Aulie 1978: 54-55), *ch'ok* 'small; chico' (Josserand and Hopkins 1988b), *ch'ok* 'tierno; niño, nene' (Schumann 1973: 79), CHN *ch'oc* 'criatura, bebé, infante, nene; hijo, hija (usado sólo con el posesivo); tierno' (Keller and Luciano 1997: 104-105), CHN-a *ch'ochoc-al* 'menor en edad' (Smailus 1975: 140), CHT <*choc*> 'niño, niña' (Morán 1695: 145), 'hijo, hija' (Morán 1695: 123), CHR *ch'ol* 'tierno' (Pérez Martínez et al. 1996: 58), <*c'ok*> 'green, unripe, young, new, newly born' (Wisdom 1950b: 722) < pCh **ch'ok* 'unripe; young child' (K&N 1984: 119, #122) .

HAB'-b'i, *haab* 'year' [CPN, CRC, NMP, NAR, SAC, NTN], cf. CHL *jab* 'año' (Aulie and Aulie 1978: 60; Josserand and Hopkins 1988b), *jab-il* 'año' (Schumann 1973: 81), CHN *jab* 'año' (Keller and Luciano 1997: 125), CHN-a *hab* 'año' (Smailus 1975: 141), CHR *jab* 'edad, año, tiempo, cumpleaños, año nuevo' (Pérez Martínez et al. 1996: 76), MOP *jaab* 'año' (Schumann 1997: 260; Ulrich and Ulrich 1976: 94), ITZ *jaab* 'año/year' (Hofling and Tesucún 1997: 302), YUC *há'ab* 'year' (variant: *wá'a*, *wá'ab*) (Bricker et al. 1998: 92), cf. also Bastarrachea et al. (1992: 92) < pM **ha'b* (K&N 1984: 120, #142), **ha'ab* (Brown 1987), **haa'b* (Brown and Wichmann 2003) or **ha'aab* (our suggestion as to yet another possible reconstruction).

7-si-pu, *Huk Si'p* 'deity name, probably "Seven Sin"' [Dresden 13c], cf. MOP *sip'il* 'delito, pecado' (Schumann 1997: 277), ITZ *si'pil* 'crime' (Hofling and Tesucún 1997: 563-564), YUC *sí'ip* (adj) 'blame, mistake' (Bricker et al. 1998: 246), *si'ipil* 'culpa, falta, pecado, yerro, delito' (Bastarrachea et al. 1992: 117), *si'p* 'culpa, falta, ofensa, pecado, yerro' (Barrera Vásquez 1995: 731) (glyphic identification by Dmitri Beliaev, personal communication to us, 1999).

ju-ku-b'i, *jukuub* 'canoe', cf. KEK *juukuub* 'trough, canoe' (Campbell 1971: 206), USP *jukúub* 'trough, canoe' (Campbell 1971: 206), POM *jukuub* 'trough, canoe' (Campbell 1971: 206), QUI *jukuub* 'canoa para navegar; batea de piedra; algo cuadrado y ahuecado donde se ponen los alimentos de los cerdos; bebedero' (Ajpacaja Tum et al. 1996a: 105), CHL *jukub* 'slop trough; canoa, dugout canoe; cayuco' (Josserand and Hopkins 1988b), *jucub* 'cayuco' (Aulie and Aulie 1978: 68), *jukub* 'canoa' (Schumann 1973: 83), CHN *ju-cub* 'cayuco, canoa, lancha' (Keller and Luciano 1997: 141), CHN *hucub* 'canoa' (Smailus 1975: 144), CHT *hucub* 'barco' (Morán 1695: 90, 97), 'barco y todo genero de

embarcación' (Morán 1695: 97) < pM *jukuub* ' (K&N 1984: 122, #209) (K'iche'an sources are cited in support of vowel length in the second syllable; the item is also attested throughout Greater Q'anjob'alan, but these attestations are less pertinent for phonological matters.)

HUL-ye, *hul[eh]y* 'he arrived'. Brown and Wichmann (2003) show that a long **ii* in proto-Ch'olan may arise from **eh*. Thus this is the expected early rendering of the enclitic, which in later inscriptions acquired the shape *-iiy*. See Stuart et al. 1999b: vol. 2, p. 37 for glyphic data on the development of the suffix.

HUN-na / **hu-na**, *hu'n* 'book', cf. CHL *jun* 'papel; libro; carta; amate (árbol)' (Aulie and Aulie 1978: 69), *jun* 'amate fig; amate' (Josserand and Hopkins 1988b), CHN *jun* 'papel; libro; cuaderno' (Keller and Luciano 1997: 143), CHN-a *hun* ~ *hum* 'escritura, documento' (Smailus 1975: 145), CHT <*hun*>, <*vn*> CHR *jun* 'papel, libro, carta, amate (árbol)' (Pérez Martínez et al. 1996: 88-89), MOP *ju'um* 'papel' (Schumann 1997: 262), ITZ *ju'um* 'papel, carta, libro/paper, letter, book' (Hofling and Tesucún 1997: 330), YUC *hú'un* 'paper' (Bricker et al. 1998: 116), *ju'un* 'papel' (Bastarrachea et al. 1992: 93), LAC *hu'n* (Canger 1970) < pM **hu'ng* (K&N 1984: 120, #159) or **huu'ng* (Brown and Wichmann 2003).

IX-che-le, *Ix Chel* (god name) [Madrid Codex].

ja-yi, *jaay* 'clay bowl', cf. MOP *jaay* 'tazón de barro' (Ulrich and Ulrich 1976), TZO *jay* 'gourd, tortilla gourd' (Laughlin 1975). By Late Classic times this changes into **ja-ya**, *jay*, showing a shortening of the vowel.

JOL-la, *jo'l* 'head'. The spelling is part of the larger expression **K'IN-in-li** / **ko-JOL-la** [CHN]. The skull-shaped **JOL** sign was deciphered by David Stuart in 1995 (Martin 1997: 860, n. 15), based on an occurrence with an infixed **lo** sign. This example, **JOL-lo**, would be an example of a late Ch'olan form that has undergone the development *jo'l* > *jol*, whereas the **JOL-la** example from Chichen Itza is either archaic Ch'olan or contemporary Yucatecan. Cf. CHL *jol* 'cabeza' (Schumann 1973: 82; Josserand and Hopkins 1988b), CHT *hol* 'cabeza' (Morán 1695: 95), CHR *jor* 'cabeza' (Pérez Martínez et al. 1996: 87), TZO *jolol* 'head, tuber, hair of head, top /harp, cross, burden, hill, mountain/, heart /palm/, peak, butt /rifle/, scroll /guitar, violin/, tip /candle/, roof, condyle, cap /mushroom with conical cap/, ITZ *jo'ol* 'cabeza/head' (Hofling and Tesucún 1997: 322), YUC *hó'ol* 'head, hair' (Bricker et al. 1998: 110) < pM **jo'l* (K&N 1984: 122, #203, and Brown and Wichmann 2003).

ju-b'i, *juub* 'conch, trumpet', cf. YUC *hub* ~ *hu* 'shell' (Bricker et al. 1998: 113), *hub* 'caracol, la trompeta o bocina del caracol' (Barrera Vásquez 1995: 238), *jub* 'caracol marino. Choncha del caracol marino' (Bastarrachea et al. 1992:95). Glyphic identification by Houston et al. (1998).

ju-chi, *juu[h]ch* 'shell', cf. CHL *jujch* 'concha' (Aulie and Aulie 1978: 68). Glyphic identification by Houston et al. (1998).

ju-lu, *ju* ‘spear’, cf. MOP *ju* ‘arco, flecha’ (Schumann 1997: 262); this is related to a verb meaning something like ‘to shoot (arrows)’ attested throughout the Greater Lowland languages, cf. CHL *jule* ‘to shoot (gun); tirar (escopeta) (Josserand and Hopkins 1988b), *ju* ‘tirar (con escopeta, piedra, tirador), ensartar’ (Aulie and Aulie 1978: 69), *ju*-oñi-bäl ‘escopeta’ (Schumann 1973: 83), CHN *ju* ‘tirar, lanzar, aventar, echar; ensartar (aguja), enhebrar; ensartar (carne, pescado)’, CHT <*hulu*> ‘flechar’ (Morán 1695: 115), <*abhulia*> Morán 1695: 115), <*hutu*> ‘enjebrar aguja’ (Morán 1695: 115), <*hutu*> ‘enjebrar aguija’ (Morán 1695: 111, probably copying error for *hulu*), CHR *jur* ‘tirar, apedrear’ (Pérez Martínez et al. 1996: 89), ITZ *ju* ‘flecha, arco y flecha/arrow, bow and arrow; meter/insert’ (Hofling and Tesucún 1997: 326), YUC *bul* ‘focus; light; thrust, thread /needle/, plunge’ (Bricker et al. 1998: 115), *juul* ‘enhebrar, ensartar, atravesar’ (Bastarrachea et al. 1992: 93), pTz **ju* ‘picar’ (Kaufman 1972: #789). The Ch’orti’ form <*huhr*> ‘missile, arrow, bullet, anything thrown, any hunting implement, a throw’ (Wisdom 1950b: 472) is most likely not an existing lexical item—Wisdom generally cites verb roots with nominal meanings and includes among roots forms that have the infix passive morpheme *-h-* (Wichmann 1999: Section 0.3); the true nominal form referring objects of the verb *jur* would be <*huhrib*> ‘bullet, gunshot’, also in Wisdom (1950b).

JUN-na, *ju’n* ‘one’, cf. CHL *jun* ‘one; uno’ (Josserand and Hopkins 1988b), *ju-jum-p’ejl* ‘cada cosa’ (Schumann 1973: 82), CHN *hun-* ‘uno’ (Smailus 1975: 145), MOP *jun-* ‘uno’ (Schumann 1997:262), ITZ *jun* ‘uno/ one’ (Hofling and Tesucún 1997: 327), YUC *hun* ‘one’, *hüun* ‘alone’ (Bricker et al. 1998: 115), *jun* ‘uno’, *juun* ‘solo, único’ (Bastarrachea et al. 1992:93). The pM form has been reconstructed as **juun* by K&N (1984: 137, #663) and Brown and Wichmann (2003), but cf. CHJ *ju’n* (Hopkins 1967: 179).

JUN-pu-wa, *ju’n pu’w* (or *puw*) ‘One Blowgun’ [K793, Kerr 1989–2000], cf. QUI <pub> ‘blowgun’ (Basseta 1698? via Tedlock 1985: 341), TZU *pujb* ‘cerbatana’ (Pérez and Hernández 1996: 316), CAK *pub ru* ‘cerbatana, fusil’, CHU *pub* ‘cerbatana’ (Diego 1998: 184). If, as we suspect (Lacadena and Wichmann n.d.), the syllabary lacked a **wu** sign **pu-wa** would be ambiguous: it could both be the default way of writing a short vowel and, as would normally be the case, the way of indicating a glottal stop. Since Chuj is generally conservative with respect to glottal stops the form in this language suggests that **pu-wa** could spell *puw*.

ka-na, *kan* ‘four’ [EKB 96 Glyphs], cf. MOP *kän* ‘cuatro’ (Schumann 1997: 99), ITZ *kän-*, *käm-* ‘cuatro’ (Hofling and Tesucún 1997: 342), YUC *kan* ‘four’ (Bricker et al. 1998: 122), *kan* ‘cuatro’ (Bastarrachea et al.1992: 94), CHL *ch+m p’e* ‘four; cuatro’ (Josserand and Hopkins 1988b), *chämp’ejl* ‘four’ (Aulie and Aulie 1978: 52), CHN *chän-*, *chäm-* ‘cuatro/four’ (Keller and Luciano 1997: 81), CHN-a *chan* ‘cuatro’ (Smailus 1975: 136), CHR *chante* ‘four’ (Pérez et al. 1996: 34) < pM **kaang-ib*’ (K&N 1984: 137, #666).

ka-se?-wa, *kase’w* ‘month name’, cf. KEK (CHR?) <cazeu> (Thompson 1971: 106).

ko-ko-no-ma, *ko[h]k-* ‘to take care, protect, keep’ [CPN, T. 21-A, Bench]. Cf. CHT *cohco* ‘guardar’ (Morán 1695: 119), CHR *kojk* ‘to protect, keep’ (Wisdom 1950b).

ku-se?-wa, *kuse'w*. Alternative form of month name. Cf. **ka-se-wa** above.

ku-tzu, *kutz* 'turkey', cf. MOP *kutz* 'pavo, guajolote' (Schumann 1997: 265), ITZ *kutz* 'pavo/turkey' (Hofling and Tesucún 1997: 367), YUC *kùutz* 'wild turkey' (Bricker et al. 1998: 135), *kuuts* 'pavo silvestre, pavo montés de esta tierra' (Bastarrachea et al. 1992: 97).

ku-yu, *kuy* 'owl', cf. YUC *ah kuy* 'una especie de buho' (Barrera Vásquez 1995: 357).

k'a-b'a, *k'ab* 'hand, arm', cf. CHL *c'äbäl* 'mano, brazo' (Aulie and Aulie 1978: 44), *k'öb*, *k'ö* 'brazo, mano' (Schumann 1973: 84), CHN *c'äb* 'mano; brazo; rama' (Keller and Luciano 1997: 67), CHN-a *kab* 'mano' (Smailus 1975: 151), CHR *k'ab* 'mano' (Pérez Martínez et al. 1996: 107), CHT <*cab*> (Morán 1695: 137), MOP *k'ä* 'mano' (Schumann 1997: 266), ITZ *k'ab* ~ *k'ä* 'brazo, mano/arm, hand' (Hofling and Tesucún 1997: 371, 386), LAC *k'äb* 'mano' (Canger 1970), YUC *k'ab* 'hand, arm, lower forearm; branch; millstone' (Bricker et al. 1998: 140), *k'ab* 'mano, brazo, antebrazo' (Bastarrachea et al. 1992: 98) < pM **q'ab* 'hand' (Brown and Wichmann 2003).

K'AK'-k'a, *k'a[h]k* 'fire', cf. CHL *c'ajc* 'fuego, calentura, luz' (Aulie and Aulie 1978: 41), *k'ajk* 'fuego' (Schumann 1973: 84), *k'ajk* ~ *k'ajk* 'fire; fuego' (Josserand and Hopkins 1988a) CHN *c'ac* 'fuego, lumbre' (Keller and Luciano 1997: 64), CHN-a *kak* 'fuego' (Smailus 1975: 152), CHT <*cac* ~ *caac* ~ *cahc*> 'fuego' (Morán 1695: 115), TZE *k'ahk* 'calentura, fuego' (Slocum and Gerdel 1965), TZO *k'ak* (Laughlin 1975), ITZ *k'aak* 'fuego, fire' (Hofling and Tesucún 1997: 386), MOP *k'aak* 'fuego' (Schumann 1997: 266), YUC *k'áak* 'flame, fire' (Bricker et al. 1998: 143, cf. also Bastarrachea et al. 1992: 99), etc., from pM **q'ahq* (K&N 1984: 123, #247, and Brown and Wichmann 2003).

K'AN-na, *k'a[h]n* 'stairway, seat, bench', cf. **K'AN-na-TUN-ni-li**, *k'a[h]n tuunil* 'stone bench, stone stairway' [TNA, M.95], **K'AN-na-TUN-ni**, *k'a[h]n tuun* [DPL, H.S. 4]. In the speech, *k'an* 'yellow' and *k'ahn* are minimal pairs although they are written in the same way. Cf. CHN *c'änjo* 'almohada' (Keller and Luciano 1997: 69), CHR *k'ajn* 'silla, asiento, banca, mesa' (Pérez Martínez et al. 1996: 108), MOP *k'aanche* 'escalera' (Schumann 1997: 266), YUC *k'áanche* 'banquillo, lugar donde se asienta algo, objeto o cosa que sirve para sentarse' (Bastarrachea et al. 1992: 99), ITZ *k'an-che* 'asiento, silla'/seat, chair', *k'an-jo'ol* 'almohada/pillow' [possibly from *k'aan* according to the authors] (Hofling and Tesucún 1997: 374).

K'AN-na, *k'an* 'yellow', cf. CHL *c'än* 'maduro; pálido' (Aulie and Aulie 1978: 45), *k'än* 'yellow; amarillo' (Josserand and Hopkins 1988b), *k'än-k'än* 'amarillo' (Schumann 1973: 85), CHN *c'än* 'amarillo; sazón' (Keller and Luciano 1997: 68), CHR *k'ank'an* 'amarillo, anaranjado' (Pérez Martínez 1996: 108), MOP *k'än* 'amarillo' (Schumann 1997: 266), ITZ *k'än* 'amarillo/yellow' (Hofling and Tesucún 1997: 381), YUC *k'an* 'ripe' (Bricker et al. 1998: 144), *k'aan* 'amarillo, cosa amarilla', *k'anpile'en* 'de color amarillo, atericiado en el color', *k'an ch'uuy* 'pálido, amarillento' (Bastarrachea et al. 1992: 98-9) < pM **q'an* (K&N 1984: 123, #248, and Brown and Wichmann 2003).

K'AWIL-la, K'AWIL-wi-la, k'a-wi-la, k'awiil 'name of divinity', cf. YUC *k'awil* 'patronímico maya' (Barrera Vásquez 1995: 387), (*ix*) *k'awil* 'cigarrón verde' (Barrera Vásquez 1995: 387 citing the Vienna Dictionary). So far attempts to etymologize this name have failed.

K'IN-ni-chi [widespread] / **K'IN-ni-hi-chi** [CPN St. 9], *k'i[h]n-ich* 'heated', cf. CHR *ink'ijn* 'caliente, tibio' (Pérez Martínez 1996: 70), *k'ijna'r* 'enojo, cólera, envidia' (Pérez Martínez 1996: 114), *k'ijnes* 'incomodar, enojar, irritar, calentar' (Pérez Martínez 1996: 114), *k'ijnk'ijn rum* 'tierra caliente' (Pérez Martínez 1996: 114), and *-V_ich* 'adjectivizer', YUC *k'üint-* 'calentar, entibiar' (Bastarrachea et al. 1992: 100). This is a possible alternative transliteration of the form traditionally supposed to mean 'sun-eyed' or 'sun-faced' in Yucatecan, cf. Wichmann (2000).

K'IN-a, K'i[h]na['] 'Hot Water'. The underlying form is *k'ihn-ha*'. For the morpheme *k'ihn* cf. the Ch'orti' forms cited in the preceding entry. Glyphic identification by Zender (n.d.). The /h/ is deleted morphophonemically because of its position following a consonant, cf. for a similar phenomenon the place-name **YAX-a, Yax-(H)a'**.

K'IN-ni-HA'-NAL, k'i[h]nha'nal 'Hot Water-Place'.

K'UH-tzi, k'uuh_tz 'tobacco' [Codex Dresden], cf. KAN *k'utz* 'tabaco bobo, tabaco cimarrón' (Diego Antonio et al. 1996), ACA *k'utz* 'tabaco bobo', CHU *k'utz* 'tabaco baboso, pisiete, tabaco verde para mascar' (Diego 1998: 126), CHL *k'uhtz* 'tabaco; cigarro, puro' (Aulie and Aulie 1978: 43), *k'ujtz* 'tobacco; tabaco' (Josserand and Hopkins 1988b), CHN *k'utz* 'puro, tabaco' (Keller and Luciano 1997: 73), CHR *k'uhtz' te* 'tobacco tree' (Wisdom 1950b) (the final /tz'/ is probably a misrecorded /tz/), MOP *k'uutz* 'tabaco' (Schumann 1997: 268), ITZ *k'uutz* 'tabaco/tobacco' (Hofling and Tesucún 1997: 402), YUC *k'úutz* 'tobacco' (Bricker et al. 1998: 158, similarly Bastarrachea et al. 1992: 101). K&N (1984: 124) reconstruct this as a Lowland Languages item **k'uhtz*, but it actually goes further back to Western Mayan or even proto-Mayan as the Greater Q'anjob'alan forms (KAK, ACA, CHU) show. Brown and Wichmann (2003) reconstruct it as pM **k'uhtz*.

k'u-k'u, k'uk' 'quetzal', cf. CHL *mank'uk'* 'pájaro (rojo con cabeza negra, pico blanco) [seen near San Miguel] (Josserand and Hopkins 1988b), *x-k'uk'* 'quetzal' (Schumann 1973: 100), CHN-a *kuk* 'plumas' (Smailus 1975: 154), CHT <*cuc*> 'pluma, verde' (Morán 1695: 152), CHR *k'uk'um* 'pluma' (Pérez Martínez et al. 1996: 119), ITZ *k'uk'um* 'pluma/feather' (Hofling and Tesucún 1997), YUC *k'ú'uk'um* 'feathers, plumage' (Bricker et al. 1998: 158), *k'u'uk'um* 'pluma de ave en general' (Bastarrachea et al. 1992:101), LAC *k'u'-k'um* 'pluma' (Canger 1970), TZO *k'uk'umal* 'feather' (Laughlin 1975), QUI *q'u_uq'* 'quetzal' (Ajpacaja Tum et al. 1996b: 311) < pM *q'u'q'* (K&N 1984: 124, #272). Since no other Mayan languages exhibit a glottal in this form, the glottal in the reconstruction of Kaufman and Norman seems to be based on the Yucatecan forms. These forms, however carry an *-um* in addition to the root reconstructed by Kaufman and Norman and mean 'feather', not 'quetzal bird'. It is not certain whether a reconstruction **q'u'q'* can be made from the Yucatecan material simply by subtraction (of

-um) and addition (of the glottal). An incorrect reconstruction might explain why the hieroglyphic form is spelled as if there is no glottal in it.

k'u-u-lu, *k'u'ul* 'holy', **IXIK-k'u-la**, *ixik k'u'ul* 'holy woman' [CRC]. These forms are specifically Yucatecan or archaic, pre-*proto-Ch'olan*. The *Ch'olan* word for 'holy' appears to have been *k'uhul*, as indicated by the spellings **K'UH-lu** and **K'UH-(H)UL-lu**, cf. CHL *ch'uj-otot* 'iglesia' (Schumann 1973:79), *ch'ujlel* 'deceased; finado' (Josserand and Hopkins 1988b), CHT *chu* 'ydolo' (Morán 1695: 127), MOP *k'unaj* 'iglesia' (Schumann 1997: 267), ITZ *k'u* 'sagrado?/sacred?' (Hofling and Tesucún 1997: 398), *k'u-naj* 'iglesia, templo/church, temple' (Hofling and Tesucún 1997: 399), YUC *k'uh* 'God, saint; Kuh [surname]' (Bricker et al. 1998: 158), <*k'uul*> 'dios o ídolo' (Barrera Vásquez 1995: 421 citing the *Diccionario de Motul*).

k'u-ti-ma. This form is from El Cayo. Although its meaning is unknown (possibly built on pM **k'ut* 'crunch, mash, shell', an item attested throughout the Greater Lowland languages) we include it because of its shape, which is similar to other vowel + /m/ shaped suffixes.

-LAJUN-na (or **-LAJ?-na**), *-laju'n* (or *-laj[u]n*) 'fifteen' [CHN, in the expression **5-LAJUN-na** '15']. Perhaps etymologically from pM **laj* 'all' + **ju'n* 'one' (the latter tentatively reconstructed as such on the basis of evidence cited under **JUN-na** above).

la-ka, *lak* 'plate', cf. CHT *lac* 'escudrillo, plato tambien' (Morán 1695), *lac* 'plato' (Morán 1695), ITZ *lak* 'cajete de barro/clay dish' (Hofling and Tesucún 1997: 403), YUC *lak* ~ *làak* 'clay cup' (Bricker et al. 1998: 162, 163), *lak* 'taza de barro, plato o cazuela de barro' (Bastarrachea et al. 1992:102), LAC *räk* 'barro, olla, instrumento de barro' (Canger 1970), TCO *laq* 'container' (Kaufman 1969), MAM *laq* 'plato, escudilla', QUI *laq* 'trasto; escudilla' (Ajpacaja Tum et al. 1996b: 180), HUA *laak* 'cazuela, cajete' (R. Larsen 1955). The Itzaj form, the Yucatec alternant *làak*, and the Huastec forms all seem to point to a long vowel, although the other Yucatec alternant *lak* and the Lacandon, Mam, and K'iche' forms seem to point to a short vowel. Brown and Wichmann (2003) reconstruct this as **laq*, with a vowel that was probably of intermediate length.

la-ka-ma, *lakam* 'big; banner', cf. <*lakam*> 'los pendones o estandartes o banderas; cosa grande y gruesa' (Barrera Vásquez 1995: 434 citing the *Diccionario de Motul*); the root *lak* is attested in CHL, cf. *lac* 'agarrado (un objeto largo)' (Aulie and Aulie 1978: 71) and has cognates in Q'anjob'alan, e.g. ACA *lak* 'cargar en las manos, llevar abrazado' (Andrés et al. 1996: 96).

lu-ma, *lu'm* 'earth' [XLM, Pan. 4], cf. CHL *lum* 'tierra, suelo' (Schumann 1973: 86), *lum* 'land, earth; tierra' (Josserand and Hopkins 1988b), CHR *rum* 'tierra, mundo, suelo, piso, lugar, terreno' (Pérez Martínez et al. 1996: 176), MOP *lu'um* 'terreno, tierra; suelo' (Schumann 1997: 269), *lu'um* 'tierra' (Ulrich and Ulrich 1976: 124), ITZ *lu'um* 'tierra, suelo/earth, land' (Hofling and Tesucún 1997: 426), YUC *lu'um* 'land, spleen' (Bricker et al. 1998: 175). Although the context does not clearly secure that the meaning is that of

‘land, earth’, future research may prove this example useful (glyphic identification by Boot 1999a).

MAK-ka, *mak* (month name).

MAN-ni, *maan* (place-name), cf. (?) ITZ *-man* ‘árbol/tree’, in the tree names *ajya’ax-man*, *b’akel-man*, *ya’ax-man* (Hofling and Tesucún 1997: 429).

ma-xi, *maax* ‘monkey’ [PCR monuments, e.g. Alt. 2 (9.16.0.0.0), K1211, K1203, K2010, Kerr 1989–2000], cf. CHL *max* ‘mono araña, mico’ (Schumann 1973:87), *max* ‘kinkajou; mico de noche, martuza (animal)’ (Josserand and Hopkins 1988b), MOP *ma’ax* ‘mico araña’ (Ulrich and Ulrich 1976: 127), ITZ *ma’ax* ‘mico/spider monkey’ (Hofling and Tesucún 1997: 434), YUC <*ma’ax*> ‘mico, mono’ (Barrera Vásquez 1995: 511, Bastarrachea et al. 1992: 102) <#*ma’x* (internally diffused, according to K&N 1984: 125, #315) or pM **maa’x* (Brown and Wichmann 2003).

ma-yu-yu, *mayuy* ‘haze’ [part of the name of a captive from Naranjo, *Yax Mayuy Chan Chaahk*, mentioned on TIK St. 5, zA1-3 and of *Mayuy K’awiil*, a sculptor of lintels from Laxtunich], cf. CHR *mayuy* ‘neblina’ (Pérez Martínez 1996: 138); K. Hull gives a more precise definition of the term, explaining that “*mayuy* is a kind of haze, smoke, or cloud that carries no moisture and settles on the mountain sides. It sometimes comes as far down as the valley floor, often just before rainy season. It can also be the name for the smoke from burning fields (some consultants said *mayuy* was the same as *b’utz’*, ‘smoke.’ Others use them together at times as *b’utz’ mayuy*)” (Hull 2000).

mi-ya-tzi, *miyaatz* ‘wise person’, cf. YUC *miats* ‘sabio, docto, científico’ (Barrera Vásquez 1995: 523).

mo-o-la, *mo’ol*. Part of the expression **a-pa-ya-la-mo-o-la** [YAX St. 18] / **a-pa-ya-mo-o-la** [YAX, HS 3, C7]. Perhaps related to YUC *mó’ol* ‘paw’ (Bricker et al. 1998: 186)?

mu-ka, *mu’k* ‘omen’ [Dresden D10a], cf. YUC <*muuc*> ‘noticia, fama’ (Barrera Vásquez 1995: 534, citing Swadesh et al. 1970). A duplicated vowel in the colonial sources is not in conflict with the glyphic form, which indicates a glottal. The form is synonymous with *muut* and *mu’wak* (cf. below).

mu-ku-yi, *mukuuy* ‘dove’ [Coe 1973: 83], cf. CHL *mucuy* ‘paloma’ (Aulie and Aulie 1978: 81), CHR *mukuy* ‘tórtola’ (Pérez Martínez et al. 1996: 147), YUC *mukuy* ‘turtledove’ (Bricker et al. 1998: 188), *mukuy* ‘tórtola’ (Bastarrachea et al. 1992: 105) <#*ix muukuur* (diffused?) (K&N 1984: 126, #333) (glyphic identification by Houston et al. 1998).

mu-ti, *muut* ‘bird; omen’ [Dresden], cf. YUC *h mut* ‘blackbird with white beak’ (Bricker et al. 1998: 191), *mut* ‘ave de plumaje negro y de pico verde’ (Bastarrachea et al. 1992: 105-106), <*mut*> ‘faisán, ave; nueva o fama, en buena y en mala parte’ (Barrera Vásquez 1995: 542), LAC *mut* ‘una ave’ (Canger 1970, who explicitly marks the vowel as short),

CHL *mut* ‘pollo, gallina’ (Schumann 1973: 88), *mut* ‘bird, chicken; gallina o pollo’, *ch’iriri mut* ‘pájaro pequeñísimo’ (Josserand and Hopkins 1988b), CHN *mut* ‘pájaro, ave’ (Keller and Luciano 1997: 165), CHR *mut* ‘pájaro’ < WM **muut* (K&N 1984: 126, #338). We agree with Kaufman and Norman that the depth of this item reaches proto-Western Mayan, given attestations in Tzeltalan and Greater Q’anjob’alan (if not pM, given the Yucatecan forms), but it is not clear where the data for the vowel length in their reconstruction come from. The vowel could in fact be short.

mu-wa, *mu*[’]*wa*[*k*] ‘tidings’ [Dresden 17b], cf. YUC *mu’wak* ‘nuevas o fama, en buena y en mala parte’ (Barrera Vásquez 1995: 543). In Codex Dresden 17b **mu-ti**, *muut*, **mu-ka mu’uk**, and **mu-wa**, *mu’wa*[*k*] substitute for each others, as synonyms.

mu-wa-ni, *muwaa*[*h*]*n* ‘hawk’, cf. CHR *muajn* ‘hawk (generic)’ (Wisdom 1950b), *mwan* ‘gavilán (grande)’ (Pérez Martínez et al. 1996: 149), MOP *mujan* ‘gavilancillo’ (Schumann 1997: 271), ITZ *mujan* ‘gavilán/hawk’ (Hofling and Tesucún 1997: 454).

MUYAL-li, *muyaal* ‘cloud’, cf. MOP *muyal* ‘nube’ (Schumann 1997: 271; Ulrich and Ulrich 1976: 134), ITZ *muyal* ‘nube/cloud’ (Hofling and Tesucún 1997: 458), YUC *múuyal* (Bastarrachea et al. 1992: 106), LAC *muuyaar* (Canger 1970). The spelling **MUYAL-la** is also attested, pointing to a development from long to short vowel. The Itzaj-Mopan and Lacandon forms seem to provide independent evidence for the original long vowel.

na-b’i, *naa*[*h*]*b*’ ‘pool’, cf. CHL *ñajb* ‘mar’ (Aulie and Aulie 1978:), CHN *nab* ‘mar, oceano’ (Keller and Luciano 1997: 166), ITZ *naab*’ ‘loto/lotus, water lily’ (Hofling and Tesucún 1997: 468), *k’ab’-naab*, *k’a’-naab*’ ‘mar/sea’ (Hofling and Tesucún 1997: 468: 371) < pM **najb*’ (K&N 1984: 126, #345, and Brown and Wichmann 2003). This is also spelled **na-b’a**, indicating loss of vowel length and **NAH-b’i** [PAL, T. 18, Stuccos].

NAB’-b’a, *na*[*h*]*b*’ ‘handspan’ (a numeral classifier), cf. CHL *-ñajb* ‘sufijo numérico para contar cuartas de la mano’ (Aulie and Aulie 1978: 84), MOP *naab* ‘cuarta’ (Ulrich and Ulrich 1976: 136), ITZ *naab*’ ‘cuarta (vara)/quarter-rod, measure from outstretched thumb to little finger (8–9 inches)’ (this is listed both in the function of noun and numeral classifier) (Hofling and Tesucún 1997: 468), YUC *náab*’ ‘handspan’ (Bricker et al. 1998: 192), a numeral classifier derived from the transitive verb *nab*’ ‘place near, lay aside’ (Bricker et al. 1998: 192).

na-hi, *naah* ‘house’ [TNA], cf. CHR *naj* ‘house’ (Wisdom 1950), YUC *nah* ‘house’ (Bricker 1998: 193, Bastarrachea et al. 1992: 105–6), MOP *naj* ‘casa’ (Schumann 1997: 271; Ulrich and Ulrich 1976: 138), ITZ *naj* ‘casa/house’ (Hofling and Tesucún 1997: 461), QUI *jaah* ‘house’ (1971: 214), CHU *ngah* ‘house’ (Hopkins 1967) < pM **ngAh* (Brown and Wichmann 2003).

NAL-la, *nal* ‘corn, ear of corn’, cf. CHT *nal* ‘masorca’ (Morán 1695: 139), *chocnal* ‘gilote (120), masorca antes de granar’ (Morán 1695: 139); CHR *nar* s.inv. ‘maíz, mazorca’ (Pérez et al. 1996: 150), MOP *näl* ‘mazorca’ (Schumann 1997: 271), ITZ *näl*

‘mazorca/ear of corn’ (Hofling and Tesucún 1997: 466-7), YUC *nal* ‘ear of corn’ (Bricker et al. 1998: 194), *nal* ‘elote, mazorca y planta de maíz’ (Bastarrachea et al. 1992: 107).

na-li, *naal* ‘native from?’ [DPL, HS 4, Step III: E1], cf. CHN-a *a-otot-nal* ‘habitante’; perhaps this rather has a honorific meaning, cf. TOJ *nal* ‘ladino, rico, opunto, cashlan’ (Lenkersdorf 1979) (glyphic identification by Houston et al. 1998, who suggested the meaning ‘native from?’).

ne-na, *ne’[h]n* ‘mirror’ [attested in possessed form on Topoxte, Mirror from Tomb 49, F; drawing in Teufel (2000: 147, fig. 103)]. Cf. KAN *nen* ‘espejo’, ACA *nen* ‘espejo’ (Andrés et al. 1996: 122), CHU *nen* ‘espejo, vidrio’ (Diego 1998: 152), TZO *nen* ‘mirror’ (Laughlin 1975), CHT <*neen*> ‘espejo’ (Morán 1695: 113), MOP *neen* ‘vidrio, espejo’ (Schumann 1997: 272), *neen* ‘espejo, ventana, vidrio de cualquier forma’ (Ulrich and Ulrich 1976: 140), YUC *néen* ‘mirror’ (Bricker et al. 1998: 196) < pM **nehn* ~ *neen* (K&N 1984: 126, #355) or **nehn* (Brown and Wichmann 2003).

ni-chi, *nich* ‘flower’. cf. CHL *nichim* ‘flor; vela’, *i nich* ‘flor de planta o árbol’ (Aulie and Aulie 1978: 83), *nich* ‘flower, ember, coal; flor, braza de fuego’ (Josserand and Hopkins 1988b), CHN *u nich* ‘flor (de la planta)’ (Keller and Luciano 1997: 170), CHR *nichir* ‘flor, flor de la milpa, etc., sarampión’ (Pérez Martínez et al. 1996: 152), MOP *nikte* ‘girasol, flor de mayo’ (Schumann 1997: 272), MOP *nikte* ‘girasol, flor de mayo’ (Schumann 1997: 272), ITZ *nik-te* ‘flor de mayo/frangipani’ (Hofling and Tesucún 1997: 472), YUC *nik* ‘flower’ (Bricker et al. 1998: 197), *nikte* ‘flor de pétalo’ (Bastarrachea et al. 1992:108) < LL **nik* (author reconstruction).

ni-ku-na, *ni-ku’n* ‘my platform/storage facility?’ [TIK, Mundo Perdido Vessel], cf. CHL *cunil* ‘plataforma para maíz’ (Aulie and Aulie 1978: 39), CHN *cun* ‘gallinero’ (Keller and Luciano 1997: 63).

no-#-la, *nobo’l* (?) ‘south’. This form is probably derived from *nob* ‘right’, cf. CHL *noj* ‘right hand; mano derecha’ (Josserand and Hopkins 1988b), CHN *noj* ‘grande’, *u noj* ‘mano derecha’ (Keller and Luciano 1997: 173), CHN-a *no(h)* ‘grande’ (Smailus 1975: 158), CHT <*nocab*> ‘mano derecha’ (Morán 1695: 138), <*nool*> ‘sur’ (Morán 1695: 164), CHR *nob* ‘right’, ITZ *nojol* ‘sur/south’ (Hofling and Tesucún 1997: 473), YUC *nòo-hol* ‘south’ (Bricker et al. 1998: 199), *nó’oh* ‘right (hand/side)’ (Bricker et al. 1998: 198), *nojol* ‘sur’ (Bastarrachea et al. 1992: 108), *no’oj* ‘lado derecho, mano derecha, derecha’ (Bastarrachea et al. 1992: 108), LAC *noohar* ‘sur’ (Canger 1970).

nu-ku, *nu[h]ku[l]* ‘skin’ [PAL 96 Glyphs, Hellmuth Panel]. The new interpretation **nu-ku**, *nuk* ‘skin?’ of **nu-ku** formerly seen as a word meaning ‘great’ in the name **SAK nu-ku NAH**, referring to Palenque’s House E (a structure actually coated with a white paint) is due to Martin and Grube (2000: 163). Marc Zender (personal communication, April 2001) has suggested the improved transliteration *nu[h]ku[l]*, based on the evidence of Tzeltalan forms such as *nukul* ‘cuero’ (Slocum and Gerdel 1965: 167) and Tzotzil *nukul* ‘pelt, skin (of animal)’ (Laughlin 1975). To this might be added Q’anjob’al *nuqul* ‘corteza

de ciprés' (Diego Antonio et al. 1996), which secures a reconstruction at the proto-Western Mayan level and thus renders the appearance in a Ch'olan context of *nukul* 'hide' more expected. On the Hellmuth Panel the item enters into the sentence *na[h]waj unu[h]ku[l] uko[']haw* "Ruler 4", 'the hide and helmet of Ruler 4 were adorned', a perfect semantic context for the 'hide' interpretation—again an observation due to Zender.

nu-na / nu-'u-na, nu'un '?'. Appears in the name of the Tikal ruler *Nu'n U-Ho'l Chaahk*. Cf. YUC (*ab*) *nun* 'bozal que no sabe hablar la lengua de la tierra, o balbuciente, tartamudo, o rudo que no aprovecha enseñarle' (Barrera Vásquez 1995: 588, citing the *Diccionario de Motul*)

-o-ka, (h)o'ok 'valley' (?). This is found in the following expressions: **a-SAK-o-ka**, a[j] sak (h)o'k [YAX, L. 26, R1], **SAK-o-ka** [NTN, Drw. 29, 15; Drw. 52, B8; Drw. 65, N3]; **ya-xo-o-ka**, *yaxo'k* 'a toponym' [COP Str. 10L-22A, CLK lintel from Str. IV-B] (these last identified by Wagner 2000: 33). The head of the compound is probably to be identified with the MOP entry *jook* 'valle' (Schumann 1997: 262) and CHL *jok-täl* 'planada, valle' (Aulie and Aulie 1978: 65). To account for the spelling it must be considered that an original weak /h/ is expected to drop out under composition (as in YAX-a, spelling *Yax Ha*)—possibly conditioned by the quality of the preceding consonant.

OK-ki, ook 'foot', cf. CHL *ok* 'foot' (Aulie and Aulie 1978: 89, Josserand and Hopkins 1988b), CHN *ok* 'pie, pierna' (Keller and Luciano 1997: 177), CHR *ok* 'pie, pata' (Pérez Martínez et al. 1996: 157), MOP *ok* 'pie' (Schumann 1997: 272), *oc* 'pie, culata, pata, caña, mango de algo, cabo' (Ulrich and Ulrich 1976: 145), ITZ *ok* 'pie, pata, cabo, mango/leg, foot, handle' (Hofling and Tesucún 1997: 484), YUC 'òok 'foot' (Bricker et al. 1998: 16) < pM *ooq (K&N 1984: 127, #375, and Brown and Wichmann 2003).

²-o-la see **yo-OL-la / o-la**.

o-na, o'n 'many', cf. CHL *on* 'bastante', *oniyi* 'hace mucho tiempo' (Aulie and Aulie 1978: 90), *oñi'-ix* 'anteriormente' (Schumann 1973:90), CHN *oni* 'antiguamente, hace muchos años, en tiempos pasados' (Keller and Luciano 1997: 178), CHN-a *-oni* 'sufijo "perfecto histórico" "ha muchos años"' (Smailus 1975: 160), CHR *oni'x* 'anteriormente, antiguamente' (Pérez Martínez et al. 1996: 157), *onya'n* 'antiguo, anterior' (Pérez Martínez et al. 1996: 158), CHT <*on*> 'mucho' (Morán 1695 VOC 45), <*oni*> 'antiguamente', KEK *yo'on* 'suficiente cantidad' (Sedat 1955: 173), TZO *wo'ne* 'a long time ago'. Houston et al. (2001: 3) identify this glyphically and relate it to a pM reconstruction *oong. Based on the Q'eqchi' and Tzotzil data, we question this reconstruction and instead suggest *o'ng, which also accords with the glyphic evidence.

pa-ka-la, pakal 'shield', cf. YUC *pakal* 'escudo, amparo del cuerpo' (Barrera Vásquez 1995: 620 citing the *Diccionario de Vienna*). Also documented in Colonial Tzeltal (cf. data collected by Fray Domingo de Ara around 1571 and copied by Guzman 1616) and used as a lineage name among the K'iche' until well into the sixteenth century (Lounsbury 1974b).

pa-sa-ja, *pasaj* ‘opening’, cf. CHL *pas* ‘salir (el sol); brotar (una planta) (Aulie and Aulie 1978: 92), CHN *pas* ‘salir, quitarse; ensuciarse, obrar’ (Keller and Luciano 1997: 182), *päse* ‘sacar debajo de la tierra, desenterrar, arrancar’ (Keller and Luciano 1997: 188), CHN-a *paç-el* ‘marcharse’ (Smailus 1975: 162), CHR *pas* ‘abrir, destapar’ (Pérez Martínez et al. 1996: 163), YUC *pá’as* ‘scratch for’ (Bricker et al. 1998: 209), *pa’as* ‘sacar o escarbar tierra con las manos o patas como hacen las gallinas’ (Bastarrachea et al. 1992:112). Glyphic identification by Lacadena (this volume).

pa-sa-ja, *pa[h]saj* ‘it was opened’. A passive form of the same verb root of which the preceding entry is a nominalized form. Cf. the preceding entry for linguistic forms from extant languages.

pa-ti, *paat* ‘back’, cf. CHL *pat* ‘espalda; atrás’ (Aulie and Aulie 1978: 92), *pat* ‘back; espalda’ (Josserand and Hopkins 1988b), CHN *pat* ‘espalda; espinazo; concha; corteza; cáscara’ (Keller and Luciano 1997: 182), CHN-a *pat* ‘espaldas’ (Smailus 1975: 162), CHR *patir* ‘behind, outside’ (Wisdom 1950b), *patir* ‘atrás, afuera, externo, superficie’ (Pérez Martínez et al. 1996: 164), MOP *pach* ‘espalda’ (Schumann 1977: 273), *pach* ‘espalda; pared, cáscara, piel, corteza’ (Ulrich and Ulrich 1976: 151), ITZ *pach* ‘espalda, cáscara, vaina de semilla, sitio (de siembras), sobre/back, husk, shell, seedpod, place (of plants), box, envelope’ (Hofling and Tesucún 1997: 495), YUC *pàach* ‘back, rear side; bark (of tree) (Bricker et al. 1998: 204), YUC *paach* ‘detrás, envés o revés de cualquier cosa, espalda de hombre o de cualquier animal’ (Bastarrachea et al. 1992: 111) < pM (WM + YUC) **paaty* (K&N 1984: 128, #392) or pM **paah*t (Brown and Wichmann 2003).

pa-xi, *paax* ‘month name’, cf. MOP *pax* ‘marimba’ (Ulrich and Ulrich 1976: 152), ITZ *pax* ‘marimba, música/marimba, music’ (Hofling and Tesucún 1997: 498), YUC *pàax* ‘musical instrument; music’ (Bricker et al. 1998: 209), *paax* ‘música, instrumento musical; tocar cualquier instrumento musical’ (Bastarrachea et al. 1992: 111).

-PIK-ki / -PIK, *pik* ‘skirt’ (attested in possessed form, prefixed with *u-*), cf. CHN *pic* ‘falda, enagua; sayuela’ (Keller and Luciano 1997: 191), CHT *pic* ‘enaguas’ (Morán 1695: 114), *pic*, *piic* ‘naguas’ (Morán 1695 :145), CHR *pik* ‘vestido’ (Pérez Martínez et al. 1996: 168), MOP *pik* ‘falda, nagua’ (Schumann 1997: 274), *pic* ‘enaguas, nagua’ (Ulrich and Ulrich 1976: 156), ITZ *pik* ‘enagua/skirt’ (Hofling and Tesucún 1997: 513), YUC *pùk* ‘petticoat; eaves (house)’ (Bricker et al. 1998: 215), *piik* ‘justán’ (Bastarrachea et al. 1992: 112) < LL **piik* (K&N 1984: 128, #406).

pi-si, *pis* ‘classifier for counts of time units’, cf. YUC *-pis* ‘cuenta para días, años y reales’ (Barrera Vásquez 1995: 656, citing *Diccionario de Motul*, in addition to other sources).

pi-tzi, *pitz* ‘ballgame’, cf. YUC *pits* ‘jugar a la pelota’ (Barrera Vásquez 1995: 657); also attested in Colonial Tzeltal.

pi-xo-la, *pixo'l* 'hat'. This form is almost certainly composed of *pix* 'to wrap' and *jo'l* 'head', as suggested by Stuart (with reference to Tzeltalan, personal communication to us, 1999), who also made the glyphic identification (although he might prefer a different transliteration). Cf. CHL *pix* 'envolver' (Aulie and Aulie 1978: 94), *pixol* 'sombbrero' (Schumann 1973: 91; Josserand and Hopkins 1988b), ITZ *pix* – *piix* 'cubrir, tapar/cover' (Hofling and Tesucún 1997: 515, 517), YUC *pix* 'cover, wrap up' (Bricker et al. 1998: 217), *piix* 'vaina, cobertura, funda' (Bastarrachea et al. 1992: 113), TZO *pix* 'shroud, wrap /tamale/, cover /head, new-born baby, patient so that he cannot be seen/, cover /face/ (girl) (Laughlin 1975), *pixol* 'hat' (Laughlin 1975) < pM **pix* 'to wrap', Tz **pix-jol* 'sombbrero' (K&N 129, #412).

po-po, *po[h]p* 'mat', e.g. as in **po-po-TUN-ni** 'slab' (lit.: 'mat-stone'), cf. CHL *pojip* 'petate' (Aulie and Aulie 1978: 95), CHN *pop* 'petate' (Keller and Luciano 1997: 194), CHR *pojip* 'petate, tule', *pojptun* 'roca, laja' (Pérez Martínez et al. 1996: 170), MOP *poop* 'estera o petate' (Schumann 1997: 275), *poop* 'petate' (Ulrich and Ulrich 1976: 160), ITZ *pop* 'petate/mat, reed mat' (Hofling and Tesucún 1997: 521), YUC *póop* 'mat' (Bricker et al. 1998: 220), 'petate' (Bastarrachea et al. 1992: 113) < pM **pohp* (K&N 1984: 129, #423, and Brown and Wichmann 2003).

pu-tz'i, *puu[h]tz* 'needle' CHN *putz* 'aguja' (Keller and Luciano 1997: 199), CHT *putz taquin* 'abuja', *putz bac* 'de hueso', *putz te* 'de palo' (Morán 1695: 82), MOP *puutz* 'aguja' (Schumann 1997: 275), ITZ *puudz* 'aguja' (Schumann 1971: 86), *puutz* 'aguja/needle' (Hofling and Tesucún 1997: 528–29), YUC *púutz* 'needle' (Bricker et al. 1998: 222), *púuts* 'aguja' (Bastarrachea et al. 1992: 113). Glyphic identification by D. Stuart, cf. Houston and Stuart (2000).

pu-wa, *pu'w* (or *puw*) 'blowgun'. See **JUN-pu-wa**.

SAK-ka, *sak* 'white', cf. CHL *säc* 'limpio' (Aulie and Aulie 1978: 107), *sä-säk* 'limpio, blanco' (Schumann 1973: 93), CHN *säc* 'blanco; limpio; claro (agua)', CHR *sak* 'canas' (Pérez Martínez et al. 1996: 178), MOP *säk* 'blanco' (Schumann 1997: 276), *süc* 'blanco/a' (Ulrich and Ulrich 1976: 192), ITZ *säk* 'blanco, gris/white, gray' (Hofling and Tesucún 1997: 551), YUC *sak* 'white; false' (Bricker et al. 1998: 238) < pM **saq* (K&N 1984: 130, #445, and Brown and Wichmann 2003). There is a unique example of **ki** complementation to **SAK** on the Gardiner Plate, as observed by Zender (2000c: 1044, n. 7). Unless there is an underspelled *-il* suffix involved, this example runs counter to the evidence from historical linguistics.

se-ka, *se'k* 'Yucatec name for the fifth month'. This month name is spelled <*seec*> in some colonial texts, a spelling which allows for the vowel to be interpreted as either glottalized or long. The hieroglyphic spelling suggests the former interpretation.

SIHOM-ma, *siho'm* 'element occurring in combination with the four month names that include color terms', cf. CHL *sijom* 'tornamilpa' (se siembra después de la cosecha de la milpa del año. No se quema) (Aulie and Aulie 1978: 105), *sijom* 'tornamil, winter maize

crop; tornamial; se siembra en diciembre' (Josserand and Hopkins 1988b), MOP *sijom* 'amole (tubérculo con que se lava)' (Schumann 1997: 277); a phonologically changed form, **SIHOM-mo**, occurs at Ixkun St. 5, J1.

si-na-na, *sinan* 'scorpion' [Dresden 46–50], cf. CHL *siñan* 'aracrán, escorpión' (Aulie and Aulie 1978: 105), *sinan* 'scorpion; alacrán. De montaña (medio azul) es el tipo más fuerte; alacrán de casa (más chico)' (Josserand and Hopkins 1988b), CHN *sina* 'alacrán' (Keller and Luciano 1997: 215), CHT *sinam*, CHR *sinam* 'alacrán, escorpión' (Pérez Martínez et al. 1996: 186), MOP *sina'an* (Schumann 1997: 277; Ulrich and Ulrich 1976: 186), ITZ *sina'an* 'alacrán/scorpion' (Hofling and Tesucún 1997: 561), YUC *síiná'an* 'scorpion' (Bricker et al. 1998: 246), *síina'an* 'alacrán, escorpión' (Bastarrachea et al. 1992: 117) < pM **sina'(a)ng* etc. (K&N 1984: 130, #468). We consider this a Ch'olan form that represents a late stage where the glottal stop was lost in Ch'olan.

su-ju-yu, *su[u]juy* 'ritually pure', cf. YUC *subuy* adj. 'intact, virgin', n. 'virgin, young lady' (Bricker et al. 1998: 250), *suujuy* 'virgen; impoluto, que no ha sido profanado, sin experiencias sexuales' (Bastarrachea et al. 1992:118).

su-tz'i [BPK, Looted Column, 9.14.3.8.4, A.D.715; YAX, L. 18, C4] / **SUTZ'-tz'i**, *suutz'* 'bat', cf. CHL *sutz'* 'murciélago' (Aulie and Aulie 1978: 107; Josserand and Hopkins 1988), CHN *sutz'* 'murciélago, vampiro' (Keller and Luciano 1997: 221), CHT *sutz'* 'bat' (Wisdom 1950b), *sutz'* 'murciélago, vampiro' (Pérez Martínez et al. 1996: 193), YUC *sòotz'* 'bat' (Bricker et al. 1998: 248), MOP *sotz'* 'murciélago' (Ulrich and Ulrich 1976: 189) < pM **soohtz'* (Brown and Wichmann 2003; we see no evidence for a glottal stop as in the reconstruction **so'tz'* by K&N 1984: 131, #488).

ta-ji, *taaj* 'bloodletter' [CPN St. 11], cf. KEK *cha* 'astilla de vidrio para sangrar' (Sedat 1955), KAN *ta* 'instrumento para sangrar a una persona en una ofrenda o sacrificio' (Diego Antonio et al. 1996). Reconstructed as pM **tyaah*, and proto-K'iche'an **chaah* 'obsidian' by Houston et al. (this volume); the data on which vowel length in this reconstruction is based are not known to us. Glyphic identification E. Wagner (personal communication 1997).

TAN-na, *ta[h]n* 'in, inside', cf. CHL *tajn* 'chest (not breast); pecho (no seno)' (Josserand and Hopkins 1988b), CHN *tan* 'dentro de, entre, en', CHN-a *tam-al* 'durante, donde' (Smailus 1975: 170), CHR *tajn* 'inner side or surface of, center, interior, concave side of' (Wisdom 1950b), MOP *taan* 'en frente de, al frente de' (Ulrich and Ulrich 1976: 195), ITZ *taan* 'frente, frente del cuerpo/front, front of the body' (Hofling and Tesucún 1997: 584), YUC *táan* 'front, face; presence' (Bricker et al. 1998: 270) < LL + GrTze **tahn* 'chest' (K&N 1984: 131, #504).

te-mu, *te'm?* / *temul?* 'throne' [K1524, Kerr 1989–2000, San José, Belize], cf. CHL *tem* 'banco' (Aulie and Aulie 1978: 111; Josserand and Hopkins 1988b), CHN *tem* 'banquito, asiento chiquito' (Keller and Luciano 1997: 233), MOP *chem* 'mesa para moler' (Schumann 1997: 256), ITZ *chem* 'canoas/canoe' (Hofling and Tesucún 1997: 200), YUC *chèem*

‘boat, canoe, washtub’ (Bricker et al. 1998: 68), *cheem* ‘canoa; batea’ (Bastarrachea et al. 1992: 83), < pM **teem* (K&N 1984: 132, #511) or **teehm* (Brown and Wichmann 2003). (Glyphic identification by Houston et al. 1998: 284).

ti-li, *ti[h]l* ‘tapir’, cf. CHT *tiil* ‘tapir’ (Morán 1695: 105), KEK *tixl* (Campbell 1971), MAM *chi*’s ‘danta, elefante’ (Maldonado et al. 1986) < pM **tixl* (K&N 1984: 132, #520).

ti-si, *tis* ‘fart’. cf. CHL *tis* ‘pedo’ (Aulie and Aulie 1978: 112; Josserand and Hopkins 1988b), CHN *tis* ‘pedo, gas, flatulencia del estómago; zumo; tiz, rabadilla’ (Keller and Luciano 1997: 239), CHT *abtiz* ‘pedorro’ (Morán 1695), CHR *tis* ‘pedo’ (Pérez Martínez et al. 1996: 204), YUC *tiis* n. ‘spurt’; ap. ‘spurt (water, blood)’ (Bricker et al. 1998: 277), *tiis* ‘saltar o salir cualquier líquido por algún agujero pequeño’ (Bastarrachea et al. 1992: 120), HUA *tiθ* ‘pedo’ (R. Larsen 1955). This is reconstructed as pM **tihs* by Brown and Wichmann (2003). Thus **ti-si** must represent a case of vowel-shortening.

to-b’o-ti B’ALAM, *toboo[h]t b’ahlam* ‘Jumping Jaguar’ [K3433, Kerr 1989–2000, said by Dorie Reents-Budet, personal communication to us, January 2001, to come from the Mirador Basin and date from A.D. 680–750], cf. CHR *tob’er* (sv) ‘salto, brinco’, *tob’* ‘volar, revolotear’ (Pérez Martínez et al. 1996: 206). It should be cautioned that the example may be a poorly drawn or repainted version of the name *Yo[p]aat B’a[h]lam* attested on several looted codex style vases and plates and an archaeologically recovered vase from Nakbe (Stanley Guenter, personal communication, May 2001).

to-ka-la, *tokal* ‘cloud’, cf. CHL *tocal* ‘nube’ (Aulie and Aulie 1978: 112), *tokal* ‘cloud; nube’ (Josserand and Hopkins 1988b), CHR *tokar* ‘nube’ (Pérez Martínez et al. 1996: 207 < pM **tyooq(-al)* (K&N 1984: 132, #527).

to-k’a, *to[o]’k* ‘flint’ [PNG, YAX], cf. CHL *tok* ‘piedra de chispa’ (Aulie and Aulie 1978: 112), *tok* ‘flint; piedra eslabón’ (Josserand and Hopkins 1988b), CHR *tok’tun* ‘pedernal, piedra de fuego’ (Pérez Martínez et al. 1996: 207), MOP *toc* ‘pedernal’ (Ulrich and Ulrich 1976: 201), ITZ *tok* ‘pedernal/flint’ (Hofling and Tesucún 1997: 597), YUC *tòok* ‘flint; fang (of snake); lancet’ (Bricker et al. 1998: 279), *took* ‘pedernal’ (Bastarrachea et al. 1992:120), LAC *tòk* ‘stone’, *säk tòk* ‘obsidian’ (Canger 1970) < LL **took* (K&N 1984: 132, #528) or either **took*, **toohk*, or **too’hk* in the system of Brown and Wichmann (2003).

tu-ku-nu, *tukun*, a contraction of *ti* and *ukun*. Occurs in **tu-ku-nu-WITZ** [CPN], a toponym that may be interpreted as *ti ukun witz* ‘at the dove hill’. Cf. YUC *’úukum* ‘mourning dove’ (Bricker et al. 1998: 20), *úukum* ‘paloma de pico negro, es silvestre’ (Bastarrachea et al. 1992: 128). Glyphic interpretation by N. Grube.

TUN-ni / tu-ni, *tuun* ‘stone’, cf. CHL *tun* ‘piedra; huevo (de pájaro, pez, tortuga, gusano)’ (Aulie and Aulie 1978: 115), CHR *tun* ‘piedra, peña’ (Pérez Martínez et al. 1996: 210), MOP *tunich* ‘piedra’ (Schumann 1997: 280), *tunich* ‘roca, piedra’ (Ulrich and Ulrich 1976:

206), ITZ *tunich* ‘piedra/stone’ (Hofling and Tesucún 1997: 607), YUC *tùun* ‘stone; Tun [surname]’ (Bricker et al 1998: 284), *tuunich* ‘piedra’ (Bastarrachea et al. 1992: 121) < pM **toong* (K&N 1984: 133, #539) or **toohng* (Brown and Wichmann 2003).

tu-pa, *tu[u]’p* ‘earflare’, cf. MOP *tup* ‘arete’ (Schumann 1997: 280; Ulrich and Ulrich 1976: 206), ITZ *tup* ‘earring’ (Hofling and Tesucún 1997: 608), YUC *tùup* ‘earring’ (Bricker et al 1998: 286), *tuup* ‘arete’ (Bastarrachea et al. 1992: 121), LAC *tuup* ‘arete’ (Canger 1970).

tu-wo-ja, *tuwo’[o]j*, *t-u-wo’[o]j* ‘in his glyphs’ [CPN]. See also **wo-o-ja**.

t’u-lu / **T’UL**, *t’ul* ‘rabbit’, cf. CHL *t’ul* ‘conejo’ (Aulie and Aulie 1978: 117; Josserand and Hopkins 1988b), CHN *ajt’ul* ‘conejo, liebre’ (Keller and Luciano 1997: 27), CHR *t’ur* ‘conejo, liebre’ (Pérez Martínez et al. 1996: 219), CHT <*tuul/tuhul*> (Morán 1695: 97), MOP *t’u’ul* ‘conejo’ (Schumann 1997: 281; Ulrich and Ulrich 1976: 215), ITZ *ajt’u’ul*, *ixt’u’ul* ‘conejo/rabbit’ (Hofling and Tesucún 1997: 135, 281), YUC *t’ú’ul* (Bricker et al. 1998: 295), *t’u’ul* ‘conejo’ (Bastarrachea et al. 1992:123), LAC *t’u’r* ‘conejo’ (Canger 1970), TZO *t’ul* ‘rabbit, eastern cottontail’ < GrLL **t’u’l* (Author reconstruction). K&N (1984: 133, #550) misquote “Tz **t’uhl*”, from Kaufman (1972: 120, #699) who, correctly, has **t’ul*. The logogram for ‘rabbit’ (attested on K1398 [Kerr 1989–2000]) is not found with phonetic complements. Glyphic identification by Houston (personal communication to Lacadena).

tza-ku, *tza’k* ‘conjurator?’ (or ‘perforator?’) [YAX L. 25], cf. KAN *tzak* ‘persona que muere para pagar el mal que otro hace (esto se hace con un brujo); huesos enterrados para hacer daño a otra persona’; ACA *tzak* ‘persona que muere para pagar el mal que otro hace (esto se hace con un brujo); huesos enterrados para hacer daño a otra persona’; TOJ *tzakb’akinum* ‘huesero’; *tzakolub* ‘avispa (Pepsis sp.)’ (Lenkersdorf 1979); CHR *tza-karnib* ‘goading stick (used for oxen)’ (Wisdom 1950), CHR *tzakre* ‘goad, order or command in animal, frighten, chase away, drive’ (Wisdom 1950), *tzakren* (vi) ‘mandar, arrear’ (Pérez Martínez et al. 1996: 220). The possibility that **tza-ku** is an underspelling of *tzaku*[C], possibly an instrumental form *tzakul* or *tzaku’l* cannot be discarded.

TZ’AK-ka, *tz’a[h]k* ‘numeral classifier’, cf. CHN *tz’äctesan* ‘completar, terminar’ (Keller and Luciano 1997: 261), CHN-a *dzac* ‘clasificador numeral significando los elementos de una serie, es variante de -dzic’ (Smailus 1975: 133) (e.g., *tal-i uy-ux-dzac ahau-ob u-kaba chanpel* . . . ‘vino el tercer rey, de nombre Chanpel . . .’, Smailus 1975: 27), CHL *ts’äctesan* ‘completar’ (Aulie and Aulie 1978: 124), *ts’äcäl* ‘completo’ (Aulie and Aulie 1978: 124), CHT *tzacta*, de *tzacatael*, v[erb]o neu[tr]o ‘ajustado, cabal’ (Morán 1695: 88), *çac-tal*, *tzactal*, *tzatal* ‘cumplido, cabal’ (Morán 1695: 95), *çactez*, *tzactez*, *tzactael* ‘cumplir’ (Morán 1695: 95), *tzactael* ‘cabal’ (Morán 1695: 88), CHR *tz’akar* ‘bastar, suficiente, añadir’ (Pérez Martínez et al. 1996: 227), CHR *tz’ak* (vt) ‘conectar, añadir’ (Pérez Martínez et al. 1996: 227). Contrasts with the root of **TZ’AK-b’u**, **TZ’AK-b’u-li**, **u-TZ’AK-ka-a**, **u-TZ’AK-a-ja** which transliterates *tz’ak*.

tz'i-bi, *tzi[h]b* 'writing, painting' [K2323, Kerr 1989–2000], cf. CHL *ts'ijb* 'letra; escritura' (Aulie and Aulie 1978: 122), *tz'ijb* 'writing; escritura' (Josserand and Hopkins 1988b), 'scribe' (Josserand and Hopkins 1988b), CHN *tz'ib* 'escribir' (Keller and Luciano 1997: 262), CHN-a *dzib-an* 'escribir' (Smailus 1975: 133), CHR *tz'ijb* (vt) 'escribir, copiar, inscribir' (Pérez Martínez et al. 1996: 230), MOP *uchi tz'iib* 'escribir, dibujar' (Schumann 1997: 282), *tz'iib* 'letras; escribir' (Ulrich and Ulrich 1976: 224), YUC *tz'iib* 'writing; Dzib [surname]' (Bricker et al. 1998: 50), *tz'iib* 'escritura, escribir, redactar' (Bastarrachea et al. 1992: 126), ITZ *tz'iib* 'escritura, escribir/writing, write' (Hofling and Tesucún 1997: 640) < pCh/pM **tz'ibb* (K&N 1984: 134, #577, and Brown and Wichmann 2003).

tz'i-ku, *tz'i[h]k* 'clay', cf. CHN *tz'ic* 'cerro, serranía, montaña' (Keller and Luciano 1997: 263), CHR *tz'ijk* 'barro' (Pérez Martínez et al. 1996: 230), *tz'ijk* 'clay, made of clay, general name for pottery objects' (Wisdom 1950b) < pCh **tz'ibk* 'hill; clay' (K&N 1984: 134, #578).

tz'u-²nu, *tz'unun* 'hummingbird', cf. CHL *ts'uñun* 'colibrí, chupaflor' (Aulie and Aulie 1978: 124), *tz'unun* 'hummingbird; gorrión' (Josserand and Hopkins 1988b), CHN *ajtz'unu* 'colibrí' (Keller and Luciano 1997: 29), CHR *tz'unun* 'gorrión' (Pérez Martínez et al. 1996: 233), MOP *tz'unu'un* 'colibrí' (Schumann 1997: 283; Ulrich and Ulrich 1976: 227), ITZ *tz'unu'un* 'chupaflor/humminfbird' (Hofling and Tesucún 1997: 645), YUC *tz'unu'un* 'hummingbird' (Bricker et al. 1998: 57), YUC *tz'unu'un* 'colibrí, chupaflor' (Bastarrachea et al. 1992: 127) < pM *tz'uunu'n* (K&N 1984: 134, #588). A newly identified spelling **tz'u-nu-na** at Pusilha suggests that **tz'u²nu** is a chronologically late spelling where the glottal has become lost. Cf. note 86.

u-lu, *ul* 'atole', cf. CHL *ul* 'atole' (Schumann 1973: 98), *ul* 'cornmeal, mush, atole' (Josserand and Hopkins 1988b), CHT <*ulul*> (Morán 1695), YUC 'is-'*uul* 'gruel made from green corn with a bit of salt' (Bricker et al. 1998: 21), *is uul* 'atole hecho con maíz nuevo molido sin fermentar' (Bastarrachea et al. 1992: 89) < pM **uul* (K&N 1984: 135, #596).

u-si, *usii[j]* 'vulture' [Bonampak murals]. The spelling **u-si** has been related by Houston et al. (1998) to *uus* 'mosquito.' Another possibility relates it to a word meaning 'vulture'. It is probably the same word as in **a-K'AN-u-si-ja**, *A[j]k'an Usiij* '(male) Yellow Vulture' [YAX H.S. 3], cf. CHR *usij* 'zopilote' (Pérez Martínez et al. 1996: 241), MOP *usi* 'rey zope, zopilote rey' (Ulrich and Ulrich 1976: 231), and Mochó '*usiib* (Kaufman 1967, pointed out to us by David Mora-Marín personal communication, 2000).

u-su-ku-na, *-suku'n* 'elder brother' [PAL, House C, W. Substructure, Panel 4], cf. CHN *säcun* 'hermano mayor' (Keller and Luciano 1997: 211), CHT <*çacun*, *zacun*> 'hermano mayor' (Morán 1695: 123), CHR *sakun* 'hermano (a) mayor, cuñado (a) mayor' (Pérez Martínez et al. 1996: 181), MOP *suku'un* 'hermano mayor' (Schumann 1997: 231), *su-cu'un* 'hermano mayor, tío' (Ulrich and Ulrich 1976: 190), ITZ *suku'un* 'hermano mayor/older brother' (Hofling and Tesucún 1997: 568), YUC *sukú'un* 'older brother;

wife's lover; tick-eating bird' (Bricker et al. 1998: 250), *suku'un* 'hermano mayor' (Bastarrachea et al. 1992: 117) < LL **saku'n* (K&N 1984: 130, #448). Another spelling *saku-na?*, *saku'n* (?) may be attested on the vase K2914 (Kerr 1989–2000) although the example is not clear. It occurs in a minor caption, which opens up with the predicate *u-b'aah* 'it is the image of . . .', then follows an expression that includes the number 4, likely referring to the four men sitting to the right of the caption, and finally *y-ichn-al u-saku'n* 'in the "presence" (loose translation) of their elder brother'. The elder brother would be the larger figure occupying the center of Kerr's photograph (both examples were pointed out to us by Dmitri Beliaev, personal communications, the first in 2001 and the second in 1999).

wa-WAJ-ji, *waaj* 'tamal', cf. CHL *waj* 'tortilla' (Aulie and Aulie 1978: 127), *waj* 'corn dough; masa, tortilla; tortilla' (Josserand and Hopkins 1988b), CHN *waj* 'tortilla; pan' (Keller and Luciano 1997: 276), MOP *waj* 'tortilla' (Schumann 1997: 284; Ulrich and Ulrich 1976: 234), ITZ *waj* 'tortilla/tortilla' (Hofling and Tesucún 1997: 655), YUC *wàah* 'tortilla, bread; Mongolian spot' (Bricker et al. 1998: 298), *waaj* 'tortilla de maíz; pan en general' (Bastarrachea et al. 1992: 129) < WM + Yu **waaj* (vs. EM **wah*) (K&N 1984: 135, #610, and Brown and Wichmann 2003).

WE'-la, *we'el* 'food', cf. CHL *we'el* 'carne, alimento' (Aulie and Aulie 1978: 129), *we'el* 'food (in general); comida', CHN *we'e* 'carne' (Keller and Luciano 1997: 281), CHT <*vee*> CHR *we'r* 'carne' (Pérez Martínez et al. 1996: 252).

wi-i-li, *wi'il* 'after, last', cf. CHL *wi'il* 'atrás; después' (Aulie and Aulie 1978: 130).

wi-ni-ki, *winik* 'person', cf. CHR *winik* 'hombre' (Pérez Martínez et al. 1996: 252), CHL *winic* 'hombre; empleado' (Aulie and Aulie 1978: 130), *winik* 'man; hombre, person; persona' (Josserand and Hopkins 1988b), CHN *winik* 'hombre' (Keller and Luciano 1997: 282), CHN-a *vinic* 'hombre' (Smailus 1975: 176), MOP *winik* 'hombre' (Schumann 1997: 285), *winic* 'hombre' (Ulrich and Ulrich 1976: 238), ITZ *winik* 'hombre, casero, amante/man, housemate (male), lover (male)' (Hofling and Tesucún 1997: 664), YUC *wiinik* 'man' (Bricker et al. 1998: 305) < pM *winaq* (K&N 1984: 136, #620).

wi-tzi, *witz* 'mountain', cf. CHL *wits* 'cerro, cerranía; inclinado' (Aulie and Aulie 1978: 130), CHL *witz* 'mountain; cerro' (Josserand and Hopkins 1988b), CHN *witz* 'sur' (Keller and Luciano 1997: 282), CHR *witzir* 'cerro, serranía' (Pérez Martínez et al. 1996: 253), MOP *witz* 'cerro' (Schumann 1997: 285), *witz* 'cerro, montaña, colina', ITZ *witz* 'cerro, serranía, montículo/hill, pyramid, mountain' (Hofling and Tesucún 1997: 665), YUC *witz* 'hill' (Bricker et al. 1998: 304), *wiits* [sic!] 'cerro, montaña, sierra, serranía' (Bastarrachea et al. 1992:130; the long vowel is unexpected, it may be an error) < pM **witz* (K&N 1984: 136, #621); Brown and Wichmann (2003) list this as ambiguously **witz* or **wItz*.

wo-hi, *wooh* 'Yucatecan month name' [K6751, Kerr 1989–2000].

wo-o-ja, *wo'oj* 'glyph(s)' [CRC, Stucco text from front cornice of Caracol Structure B64 (Chase and Chase n.d.: fig. 8)], cf. YUC <wooh> 'carácter o letra' (Barrera Vásquez 1995: 925, citing several colonial sources). The glyphic example was pointed out to us by Dmitri Beliaev (personal communication, May 2001). See also **tu-wo-ja**.

xo-ki, *xook* 'shark?' [CAY, PNG], cf. YUC *xok* 'patronímico maya [cuenta, lectura, contar, leer, raíz, cintura, cadera, obediencia, tiburón]' (Barrera Vásquez 1995: 949).

ya-k'a-b'a, *-ak'ab* 'night', cf. CHL *ac'älel* ~ *abälel* 'noche' (Aulie and Aulie 1978: 27), *aböl-e* 'noche' (Schumann 1973: 75), CHN *ac'äb* 'noche; de noche' (Keller and Luciano 1997: 4), CHR *akb'ar* 'noche' (Pérez Martínez et al. 1996: 11), MOP *ak'ä* 'noche' (Schumann 1997: 253), *ac'ü* 'noche, oscuro, tinieblas' (Ulrich and Ulrich 1976: 20), ITZ *'ak'ä* 'noche/night' (Hofling and Tesucún 1997: 147), YUC *'äak'ab* 'night' (Bricker et al. 1998: 4) < pM **ahq'ab* ~ **aaq'ab* (K&N 1984: 115, #014a).

ya-k'a-wa, *-a[h]k'* 'to give something to someone' [e.g., PAL]. Cf. CHL *ak'* 'dar' (Aulie and Aulie 1978: 27), CHN *äk'* 'dar, regalar, bastar, alcanzar, conceder' (Keller and Luciano 1997: 37), CHN *ak-e* 'dar' (Smailus 1975: 127), CHT *ak'-un* 'dar' (Morán 1695: 105), CHR *ahk'-un* 'entregar, dar, heredar, chicotear, pegar, prestar, regalar' (Pérez Martínez et al. 1996: 6) < pCh **ahk'* (the reconstruction of K&N 1984: 115, #013 is **äk'*; although the CHR data is cited, the /h/ is for unknown reasons neglected).

ya-AL, **ya-AL-la**, **ya-a**, *-a[h]l* 'son of (woman)', cf. CHL *al* 'cría' (Aulie and Aulie 1978: 29), *al* 'son' (Josserand and Hopkins 1988b), CHN *ajlo* 'muchacho, chamaco, niño; varón' (Keller and Luciano 1997: 18), CHN-a *al* 'niño (dicho de la mujer)' (Smailus 1975: 128), CHT <aual> 'your child' (Morán 1695: Conf.), CHR *ajk'-un* 'entregar, dar, heredar, chicotear, pegar, prestar, regalar' (Pérez Martínez et al. 1996: 6), MOP *al* 'hijo/a (de mujer)' (Ulrich and Ulrich 1976: 22), ITZ *al* 'cría de hembra, hijo de madre, matitas tiernas que nacen de macollas/young of female, child of mother, small plants growing from mother plant in bunches' (Hofling and Tesucún 1997: 148), YUC *äal* 'son, daughter (woman speaking)' (Bricker et al. 1998: 4), *aal* 'hijo o hija de la mujer o del animal hembra' (Bastarrachea et al. 1992: 77), LAC *y-är 'in-k'äb* 'mi dedo meñique' (Canger 1970) < pM **aal* (K&N 1984: 115, #019) or **aahl* (Brown and Wichmann 2003).

ya-ATOT-ti, *-atoot* 'house'. This is an archaic form. Cf. linguistic forms cited under **yo-OTOT**.

ya-BAT-na, *yaCV'n*. Phonologically changed form: **ya-#-ni**, *yaCVVn* (YAX, HS 3, B7 on 9.15.0.15.3, YAX St. 12, D4 on 9.16.1.0.0, and PNG, Pan. 3 on 9.17.11.6.1).

yi-cha-ni, *-ichaan* 'mother's brother' [YAX L. 88, C1], cf. CHL *ichan* 'tío (hermano de mi padre)' (Aulie and Aulie 1978: 59), CHN *ichan* 'tío' 'suegro' (Keller and Luciano 1997: 116), CHL *icham* 'tío materno' (Schumann 1973: 80), *ichan* 'tío (hermano de mi madre)' (Aulie and Aulie 1978: 59), CHT *ichan* 'tío' (Morán 1695: 168), YUC *'ücham* ~ *'üchan* 'husband' (Bricker et al. 1998: 11), *ücham* 'esposado, marido' (Bastarrachea et al. 1992:

90), ITZ *icham* ‘esposó, marido/husband’ (Hofling and Tesucún 1997: 248-249) < pM **ikaan* (K&N 1984: 120, #165).

yi-ch’a-ki, *-i[h]ch’aak* ‘claw’, cf. MOP *ich’ak* ‘uña’ (Schumann 1997: 259), *ich’ac* ‘uña’ (Ulrich and Ulrich 1976: 91), ITZ *ich’ak* ‘uña/claw, fingernail’ (Hofling and Tesucún 1997: 249), YUC *’üich’ak* ‘fingernail, claw’ (Bricker et al. 1998: 11), *üich’ak* ‘uña’ (Bastarrachea et al. 1992: 90), CHL *ejc’ach* ‘uña; casco’ (Aulie and Aulie 1978: 57), *ejch’-ak* ‘uña’ (Schumann 1973:80), CHN *ich’äc* ‘uña; garra’ (Keller and Luciano 1997: 116), CHT *ixchac* ‘garra’ (Morán 1695: Voc, 34), *yxchc*, *ixchac* ‘vña’ (Voc, 66), CHR *ejch’ak* ‘uña, garra, pinza’ (Pérez Martínez et al. 1996: 62). This has been reconstructed as **ix-ky’aq*, i.e. with a short vowel, but the MOP, ITZ, and CHL forms, that have *a*, the usual reflex of **aa* (as opposed to *ä* which would reflex **a*), nevertheless give independent reasons for assuming that a long *aa* was present in proto-Ch’olan.

yi-tz’i-na, *-i[h]tz’iin* ‘younger brother’, cf. CHR *ijtz’in* ‘hermano (a) menor’ (Pérez Martínez et al. 1996: 66), CHN *idzin* ‘hermano menor’ (Smailus 1975: 146), MOP *itz’in* ‘hermano o hermana menor’ (Ulrich and Ulrich 1976: 93), ITZ *itz’in* ‘hermanito, hermanita/younger sibling’ (Hofling and Tesucún 1997: 255), YUC *’ütz’in* ‘younger sibling; walking stick’ (Bricker et al. 1998: 10) < pM **ihtz’iin* (K&N 1984: 121, #175).

yo-OL-la / o-la / OL-la / ʔ-o-la, *(-)o’[h]l* ‘heart, interior’, cf. CHL *ojlil* ‘la mitad’ (Aulie and Aulie 1978: 90), CHN *ol* ‘querer’ (Smailus 1975: 160), MOP *ool* ‘alma’ (Ulrich and Ulrich 1976: 147), ITZ *ool* ‘sensación del cuerpo, espíritu, fe, actitud, salud, aliento’ (Hofling and Tesucún 1997: 492), YUC *’ool* ‘heart, will, energy, spirit’ (Bricker et al. 1998: 17), *’ó’olal* ‘reason, cause’ (Bricker et al. 1998: 17), *ool* ‘voluntad, estado de ánimo, intención, ganas, intento, energía moral’ (Bastarrachea et al. 1992: 109), TZO *yol* ‘anther, heart, embryo, hilum, basal scar area, core, central section’ (Laughlin 1975), *’o’n-il* ‘heart’ (Haviland 1981: 376), CHU *yol* ‘dentro, interior’ (Diego 1998). Occurs, among other places, in expressions such as *ti[h]m-aj a-w-o’[h]l* ‘thy heart is appeased (glyphic identification by Marc Zender and Barbara MacLeod, personal communication to us, March 1999) and **K’AK’-OL-la K’INICH-ni-chi**, *K’a[h]k’ O’[h]l K’i[h]nich* ‘Fire is the Heart of the Heated One’. What is apparently an unpossessed form appears as part of the title **ʔ-o-la-AJAW** on the recently excavated “bench” from Palenque, Temple XIX (N2). The duplicated vowel gives clear evidence for a glottal stop, which finds independent support in the Yucatec *’ó’ol* variant and Tzotzil *’o’n-il*.

yo-OTOT-ti, *-otoot* ‘house’, cf. CHL *otot* ‘casa’ (Aulie and Aulie 1978: 90), CHN *otot* ‘casa, edificio, hogar’ (Keller and Luciano 1997: 178), CHN-a *otot* ‘casa’ (Smailus 1975: 161), CHR *otot* ‘casa, hogar, jacal, choza’ (Pérez Martínez et al. 1996: 158), MOP *otoch* ‘hogar’ (Schumann 1997: 273), *otoch* ‘casa, hogar’ (Ulrich and Ulrich 1976: 149), ITZ *otoch* ‘casa, hogar/home, house’ (Hofling and Tesucún 1997: 488), YUC *’otoch* ‘home’ (Bricker et al. 1998: 19) < pM **-atyooty* (K&N 1984: 127, #378). See **ya-ATOT-ti**.

yu-ha, *-uh-a[l]* (?) ‘necklace, collar’, cf. CHL *ujäl* ‘gargantilla’ (Aulie and Aulie 1978: 125), *uj-äl*, *uj-ul* ‘collar, gargantilla’ (Schumann 1973: 98), *uj+l* ‘necklace, collar’

(Josserand and Hopkins 1988b), CHR *yuj* ‘necklace, anything worn or wrapped around in necklace fashion’ (Wisdom 1950b), ITZ *’uj* ‘bolita/bead’ (Hofling and Tesucún 1997: 648), YUC *’uh* ‘bead, moon’ (Bricker et al. 1998: 20), TZE *uhal(il)* ‘necklace’ (Slocum and Gerdel 1965), TZE *ualil* ‘necklace’ (Slocum 1953), TZO *’u pok* ‘white neckerchief /worn by ensign-bearer/, white collar /dog, laughing falcon/, *’u te* ‘stick fastened to dog’s neck to prevent it from chewing the rope that ties it to a tree and keeps it from marauding the corn field, *’ual* ‘chaplet or rosary /necklace with coin pendants and a pendant cross in the center, placed on the saints’ images/, *’uil* ‘necklace of woven palm /palm distributed on fiesta of St. Peter Martyr/, necklace made from thread /used to wipe off saints when they are bathed/’ (Laughlin 1975), KAN *y-u* ‘collar de animal’, *u’ej* ‘collar’, ACA *u’e ~ uy-e* ‘collar’, JAC *úw-e* ‘soquilla, collar’ (Day 1977), CHJ *uj* ‘moon, month’ (Hopkins 1976), TOJ *uh-al* ‘beads’ (Mendenhall and Supple 1949), TCO *’uuwaaj* ‘necklace’ (Kaufman 1969), CHI *chok-ów* ‘Fingerring’ (Zimmermann 1955), HUA *ow-láab* ‘gargantilla’ (R. Larsen 1955) < pM **Uh* (Brown and Wichmann 2003). There is no evidence for a glottal stop (the glottals of the Q’anjob’al and Akateko are regular reflexes of /h/). But note that several of the languages attach an *-al* suffix, i.e. Ch’ol, Tzeltal, Tzotzil, and Tojolab’al. So it is quite possible that the glyphic form is to be interpreted as *y-uh-al*.

yu-mu, yum ‘boss’ [RAZ ‘chocolate vessel’], cf. CHL *yumäl* ‘dueño de una finca; una autoridad que no es indígena; dueño del cerro’ (Aulie and Aulie 1978: 144), *yum* ‘dueño’ (Schumann 1973: 101; Josserand and Hopkins 1988b), CHN *yum* ‘dueño, amo; patrón’ (Keller and Luciano 1997: 301), CHN-a *yum* ‘señor’, MOP *yumil* ‘dueño’ (Schumann: 1997: 288), ITZ *yum* ‘padre/father’, *yum* ‘don/lord, sir, mister’, *yumil* ‘dueño, vecino, amo/owner, inhabitant, neighbour, townsman, master, boss, lord’ (Hofling and Tesucún 1997: 697), YUC *yùum* ‘father, man; God; owner’ (Bricker et al. 1998: 319), *yuum* ‘padre, señor, amo’, *yuumil* ‘jefe, dueño, amo’, *yuumtsil* ‘Dios, Señor’ (Bastarrachea et al. 1992:134) < LL **yuum* (K&N 1984: 137, #661); probably borrowed from proto-Zoquean **’omi* ‘boss father’ (Wichmann 1995: 262, ?O#027). The spelling is from the Early Classic, it is thus likely not to be taken as a counterexample although a disharmonic spelling indicating a long vowel would be expected, but rather as an example of the default convention of synharmony that was operative for a period before the disharmony rules were established.

“SCROLL”-**na** [K3924, Kerr 1989–2000, estimated by Dorie Reents-Budet, personal communication to us, January 2001, to come from the Waxaktun area and to date to around A.D. 725], **-ni** [Altun Ha Jade Plaque 256/3, Nim Li Punit, St. 2, at 9.15.7.0.0 (A.D. 738)], **-nu** [La Amelia, Pan. 2, at 9.18.13.17.1 (A.D. 804)].

T174-**chi-tu** [PAL T. XIX, Bench], T174-**chi-ta** [TIK T. 4, L. 2]. The reading of T174 is not securely established, although various proposals have been put forward.

PART III: GRAMMAR

SEVEN

Passive Voice in Classic Mayan Texts

CV-*h*-C-*aj* and -*n-aj* Constructions

ALFONSO LACADENA

Universidad Complutense, Madrid

The Passive Derivation

The passive is one of four grammatical voices in Mayan languages, and forms a system along with the active, mediopassive, and antipassive voices. A passive is derived from the active voice. An active construction is formed by an active transitive verb, which has two nominal arguments: A subject, which is coreferential with the agent of the action, and an object, which is coreferential with the patient. The passive derivation involves an intransitivization of the former active transitive verb and the reduction of one of the former two active nominal arguments. In the passive derivation, the object of the former active construction is promoted to subject of the new intransitive verb, while the subject of the former active verb is deleted or demoted to an oblique. In Mayan languages the intransitivization is made by special passive morphemes that may be infixes or suffixes to the verb. The derivation also causes the functions of pronouns to change. In the active transitive construction, ergative pronouns prefixed to the verb mark the subject (S) while suffixed absolutive pronouns mark the object (O); in the derived passive form—in an ergative context—the absolutive pronouns refer to the subject (S) of the new intransitive verb, the former object (O). The passive derivation found in the glyphic texts may be represented as follows:

ACTIVE	Erg (S)-ACTIVE VERB-Absolutive (O)	OBJECT	SUBJECT
↓	↓	↓	↓
PASSIVE	PASSIVE VERB-Absolutive (S)	SUBJECT	[deleted/oblique]

The Passive Derivation in the Glyphic Texts

Toward the end of the 1970s, both Victoria Bricker and Linda Schele posited the existence of passive formations in the glyphic texts from the evidence of syntax (Schele 1982: 19). Although their identification of the suggested passive construction has withstood the test of time, its proper morphological analysis has remained unresolved. Bricker, who was the

first to identify active constructions of root transitive verbs as ERG-CVC-*V_iw*-ABS (Bricker 1986: 126ff, 165; see also Wald 1994b; Houston 1995; Houston et al. 2000), was also the first scholar to make an attempt to explain the morphology of passive constructions. Bricker realized that unwritten infixes might be involved in the passive derivation, making reference to the processes CVC > CV*h*C in Ch'olan and CVC > CV'VC in Yucatec (Bricker 1986: 128–29, 138). She did not, however, go beyond proposing the two possible passive infixations for the Classic passive derivation paradigm to reconstruct one of them systematically in the transliteration of the related glyphic forms; she also failed to relate the *-aj* suffix usually found in passive compounds to the Eastern Ch'olan *-a* thematic suffix of derived intransitive verbs—the interpretation suggested in this paper. Instead, she considered the *-aj* a perfective suffix (Bricker 1986: 125, 165). Apart from Bricker's approach to passive constructions in the glyphic texts, the most common interpretation has been to see the *-aj* suffix itself as the passivizing morpheme.

The scheme of verbal categories traditionally found in the epigraphic literature consists of a four-way distinction of positionals, statives, transitives, and intransitives. It is evident, however, that this scheme is too simple. Other forms attested in the known Lowland Mayan languages suggest the existence of a richer pattern. Along with CVC root transitive and root intransitive verbs, Lowland Mayan languages have other forms, such as derived transitives and derived intransitives.⁸⁷ The distinctions between CVC root transitives vs. derived transitives and root vs. derived intransitives are of great importance to the understanding of passive morphology. Two facts must be considered. First, in Lowland Mayan languages CVC root transitives and derived transitives usually form their passive voice in different ways; second, the resultant intransitized passive verb may be treated either as a root intransitive or as a derived intransitive verb. Thus, in the study of passive constructions in the glyphic texts, several questions must be addressed: Does the language written in the Classic period have different ways of forming passives from CVC root transitive and non-CVC root transitive verbs? Is the resultant passive verb treated as a root intransitive or as a derived intransitive? How are these kinds of constructions made morphologically in the known Lowland Mayan languages? Is it possible to relate the attested glyphic constructions to any known paradigm of the Lowland Mayan languages as we know them from the nonhieroglyphic record, including historical reconstructions?

The *-aj* Suffix of the Passive Derivation

An *-aj* suffix is always present in hieroglyphic passive constructions. It is usually written *-Ca-ja*, *_Caj* or abbreviated as *ja*, *_C[a]j*, when the verb is written logographically. For a long time it has been a widespread assumption that the *ja* syllabic sign directly represented the *-aj* suffix. In spite of the fact that the *ja* sign is usually involved in the spelling of the *-aj* suffix, there is actually no such one-to-one correspondence. The *ja* syllable gives

87. Bricker's work on glyphic grammar (1986) had the merit of including these and other important distinctions, such as the four voices. Regrettably her linguistic contributions were neglected in subsequent research. Only recently the linguistics of the Maya script has again received the attention it deserves (see for example Wald 1994a, 1994b; Houston 1995, 1997).

the /j/ consonant of the suffix; the /a/ vowel of the suffix is given by the preceding sign if this is a Ca syllable, or has to be reconstructed if the preceding sign is a CVC logogram. In fact, a ja syllable is involved in the spelling of the *-aj* suffix only when the suffix is in final position or when it is followed by another *-aC* suffix, like the *-al* nominalizer (see below). When *-aj* is followed by another *-VC* suffix, where V is not an /a/, other jV syllabic signs are involved, their vowel depending on the vowel of the following *-VC* suffix. Thus, when *-aj* is followed by the *-e'l* nominalizer, the *-iiy* clitic or the *-o'm* future participial, je, ji, and jo syllables will be involved in the partial spelling of the *-aj* suffix.⁸⁸ The reason why the /a/ vowel in these cases is not represented in the spelling is simply that it is not to be pronounced. Following a general morphophonological rule according to which a *-VC* suffix is reduced to *-C-* when followed by another *-VC* suffix (Lacadena and Wichmann n.d.), the /a/ vowel has been syncopated.

Since *-aj* is seemingly the only distinctive element in passive constructions, some epigraphers have considered *-aj* to be *the* passive suffix. The problem with this interpretation is that, in spite of the clear passive sense of the expressions involving the *-aj* suffix, no *-aj* passive suffix is documented in any of the known Lowland Mayan languages, nor is it reconstructible for earlier stages of these languages. An **-aj* intransitivizing suffix can be reconstructed for proto-Ch'olan and is further traceable to proto-Greater Tzeltalan. “[T]here is no specific evidence, however, that proto-Cholan **-aj* was a passivizer” (Kaufman and Norman 1984: 109). If *-aj* is not a passivizer, what, then, is its morphological function in passive contexts?

Eastern Ch'olan—Ch'olti and Ch'orti—derives passives from CVC root transitives infixing a *-h-* before the last consonant of the verbal root (Fought 1967: 192–94, 205; Dayley 1990: 372; Kaufman and Norman 1984: 108–9), thus CVC > CVhC. Eastern Ch'olan is unique among the other Lowland Mayan languages in its treatment of the passive derivation. Eastern Ch'olan treats passives as derived intransitives (Kaufman and Norman 1984: 105), not as root intransitives, as Chontal, Ch'ol, and Yucatec do (Bricker 1986: chapter 2 *passim*). In Eastern Ch'olan, the resultant CVhC passive form is suffixed with a *-a* thematic suffix, marking it as a derived intransitive, thus CVhCa, CV-h-C-a. The *-a* suffix is one of the thematic suffixes for derived intransitives in Eastern Ch'olan, and—very importantly—the thematic suffix that is chosen to mark as derived intransitives *all* the passive verbs independently of which passive affix is used in the passive derivation (Kaufman and Norman 1984: 105, 108). Thus, other passive derivations in Eastern Ch'olan, like *-n* and *-w* for non-CVC transitive verbs, also have an *-a* suffix, giving the sequences *-n-a* and *-w-a*. Although this thematic suffix has not always been recognized in the grammars,⁸⁹ the

88. As in *u-ti-mi-je-la*—based on the root *tim* ‘satisfy, appease’ identified by MacLeod (personal communication, 2000)—*chu-ku-ji-ya*, or *TZUTZ-jo-ma*. The *-e'l* is a nominalizer of a certain class of intransitives; *-iiy*, a suffix whose nature is still debated, has been considered a completive marker (Houston 1997), past tense marker (Robertson, Houston, and Stuart, this volume) or a deictic clitic (Wald and MacLeod 1999); *-o'm* is a future participial (identified by David Stuart, Ben Leaf, and Terrence Kaufman, cf. Schele and Grube 1995). For the phonological rendering of these suffixes see Lacadena and Wichmann (n.d.).

89. The *-a* thematic suffix for derived intransitives attached to the passive constructions is commonly interpreted as a part of the passive suffixes, which are then being analyzed as *-na* or *-wa* instead of the more correct *-n-a* and *-w-a*.

identity of the *-a* thematic suffix for derived intransitives is well established. For example, in Ch'orti' the passive is formed in the following way:

Active		Passive	
<i>u-yob'-i-Ø</i>	'he strikes/stroke it'	<i>yo-j-b'-a-Ø</i>	'it was stricken'
<i>u-muk-i-Ø</i>	'he buries/buried it'	<i>mu-j-k-a-Ø</i>	'it was buried'
<i>uw-ir-a-Ø</i>	'he sees/saw it'	<i>ir-n-a-Ø</i>	'it was seen'
<i>u-kojk-o-Ø</i>	'he guards/guarded it'	<i>kojk-n-a-Ø</i>	'it was guarded'
<i>u-pajn-i-Ø</i>	'he digs/dug it'	<i>pa'n-w-a-Ø</i>	'it was dug'

In the passivization of CVC root transitives, represented here by *yob'* 'strike' and *muk* 'bury', the passive marker is the *-j-* infix; in the examples of passivization of non-CVC transitives, illustrated by *ir* 'see', *kojk* 'guard', and *pajn* 'dig', *-n* and *-w* are the passive markers. In all the examples, *-a* is the thematic suffix that marks the passives as derived intransitives. In Eastern Ch'olan, the *-a* thematic is not restricted to passives, it is also present in mediopassives derived through *-k'*, *-p*, and *-tz'*, producing the suffix sequences *-k'-a*, *-p-a*, and *-tz'-a*. Some examples from Chorti' are:

Active		Mediopassive	
<i>u-b'ut'-i-Ø</i>	'he fills/filled it'	<i>b'ut'-k'-a-Ø</i>	'it got filled'
<i>u-sujk-i-Ø</i>	'he cleans/cleaned it'	<i>sujk-p-a-Ø</i>	'it got cleaned'
<i>u-mak-i-Ø</i>	'he closes/closed it'	<i>mak-tz'-a-Ø</i>	'it got closed'

In these examples of mediopassive derivations of *b'ut'* 'fill', *sujk* 'clean', and *mak* 'close', the mediopassive morphemes are the *-k'*, *-p* and *-tz'* suffixes. In the three examples, *-a* is a thematic suffix that marks them as derived intransitives.

The identification of the Eastern Ch'olan *-a* thematic suffix of derived intransitives is crucial to the understanding of passivization and its linguistic affiliation in the glyphic texts. Interestingly, Kaufman and Norman (1984: 108) suggested that the Eastern Ch'olan *-a* thematic suffix for derived intransitives was formerly **-aj*:

The original form of this suffix is to be reconstructed as **-aj* rather than **-a*, since in Ch'olti, the thematic suffix is sometimes written as *-ah* when it is followed by the incomplete status marker *-el*, cf. *ca-chohbe-n-ah-el* 'we are loved' 1pl.E-LOVE-passive-them.suff.-inc. [Morán 1935a: 16], *y-tzatzbu-n-ah-el* 'you are helped' 2pl.E-HELP-pass.-the.suff.-inc. [Morán 1935a: 16], *ca-col-p-ah-el* 'we are saved' 1pl.E-SAVE-pass.-them.suff.-inc. [Morán 1935a: 14]. Apparently, word-final **-j* was lost in Eastern Cholan when the **-j* belonged to a suffix; since the **-j* was retained in intervocalic position, however, the original form with **-j* is still recoverable.

I would suggest that the *-aj* suffix involved in the glyphic texts in passive constructions is not the passive suffix but the ancestor of the *-a* thematic suffix of derived intransitives attested in Eastern Ch'olan. The spellings of the thematic suffix in the glyphic texts as *-Ca-ja*, *_Caj*, *_C-aj* or *-na-ja*, *_naj*, *-n-aj*, and *-wa-ja*, *_waj*, *-w-aj* (Figure 7.1) (see below) provide firm evidence that Kaufman and Norman's suggestion of an earlier **-aj* form of the



Figure 7.1. The *-aj* suffix on passive constructions. (a) **chu-ka-ja**, on Yaxchilan Hieroglyphic Stairway 2, Step I, C6 (after Graham 1982: 166). (b) **tz'i-b'i-na-ja**, on K2152 (Kerr 1990, vol. 2, p. 218). (c) **B'AK-wa-ja** on Tikal Temple IV, Lintel 3, B5 (after Jones and Satterthwaite 1982: 74).

Eastern Ch'olan thematic suffix was correct. Following the evolutionary sequence according to which the Classic language develops into Ch'olti, which in turn develops into Ch'orti' (Robertson 1992: 169; 1998), the phonological development of this suffix may be described as Classic *-aj* > Ch'olti *-a(h)* > Ch'orti' *-a*.

John Robertson (personal communication to S. Houston, May 1997, and to me, August 1997) disputes the interpretation of the *-aj* suffix as *thematic*, arguing against the views of Kaufman and Norman and other authors. Robertson's claim is that, according to the history that may be reconstructed for the passive morpheme of CVC root transitives, it is better to consider the *-h-...-aj* derivation not as an association of two separate *-h-* and *-aj* morphemes, but as a single *bipartite morpheme*. According to Robertson's suggestion, the Classic CV-*h*-C-*aj* passive of CVC root transitives that is proposed here (see below) would have come from an earlier **-h-...-aj* intransitive positional in Common Wasteko-Ch'olan, a form innovated from an earlier Common Mayan **-h-* intransitive positional (Houston et al. 2000). In the Common Wasteko-Ch'olan stage, the participial positional would have been **-V_il*, the intransitive positional **-h-...-aj* and **-V_iy*, and the passive **-h-*, the last morpheme representing a direct inheritance from Common Mayan. At a subsequent stage, pre-Classic Ch'olti'an, a new intransitive positional **-l-aj* would have been recruited from the participial positional **-V_il*, to which, by analogy with the **-h-...-aj* intransitive positional, *-aj* would have been suffixed; that new form, **-l-aj*, would then have occupied the place of the earlier **-V_iy* intransitive positional, which would have moved to the passive, replacing the original Common Mayan **-h-* passive. Following Robertson's reconstruction, in the next step, the Classic Ch'olti'an stage—which is the one attested in the glyphic texts—the intransitive positional function would have been taken entirely by **-l-aj*, the former **-h-...-aj* intransitive positional having moved to the passive, displacing the earlier passive marker **-V_iy* to a mediopassive function (Houston et al. 2000).

Both Robertson on one side and Kaufman and Norman on the other may be correct in their respective interpretations. Robertson's historical reconstruction of **-h-...-aj* as an original pre-Classic Ch'olti'an intransitive positional bipartite morpheme that later moved to the passive, displacing **-V_iy* to the mediopassive, is highly interesting and might have some glyphic support. Vestiges of that former pre-Classic **-h-...-aj* intransitive positional may still be found in some Early Classic texts from the eastern lowlands, as on the Hombre de Tikal (C8), dating to circa 8.18.10.8.12 (Fahsen 1988), where the positional *chum* 'to sit' is spelled **CHUM-ja**, for which I suggest the transliteration *chu[h]m[a]j*, *chu-h-m-aj-Ø* (Lacadena 2002) (Figure 7.2). The form **CHUM-ja**, *chu[h]m[a]j*—I propose—would be a vestige of the pre-Classic stage predating the complete replacement of the intransitive positional function by *-l-aj* (pre-Classic Ch'olti'an



Figure 7.2. **i-CHUM-ja**, *i chu[h]m[a]j*, on Tikal Hombre de Tikal C8 (after Fahsen 1988).

CHUM-ja, *chu[h]m[a]j* > Classic Ch'olti'an CHUM-la-ja, *chumla*) and the displacement of the former *-h-...-aj* intransitive positional to a new passive function.⁹⁰

Kaufman and Norman's interpretation of the *-aj* of *-h-...-aj* as *thematic* may also be valid. It is necessary, however, to qualify it by restricting its applicability to a specific period in linguistic history. As noted earlier, in Eastern Ch'olan the *-a* suffix is not restricted to the CV-*h*-C-*a* passive of CVC transitives. In Ch'orti', *-a* is also suffixed to other derived intransitives. Thus, most importantly, it occurs on passive derivations in *-n-a* and *-w-a* of non-CVC transitives, as well as on mediopassives in *-k'-a*, *-p-a*, and *-tz'-a*.⁹¹ It is unlikely that all those *-a* (< **-aj*) suffixes on passives and mediopassives are not related—especially as regards the passives. The explanation that may be proposed is that at some time in an Eastern Ch'olan context, the originally *-h-...-aj* bipartite morpheme was reanalyzed as two separate morphemes, *-h-* and *-aj*; *-h-* would now be treated as *the* passive marker, and *-aj* would have become considered a *thematic* marker for a certain class of intransitives, presumably spreading from the passive of CVC root transitives, CV-*h*-C-*aj*, to the passives of non-CVC transitives, *-n* and *-w*, which would become *-n-aj* and *-w-aj*. At the same time or perhaps later, *-aj* would also have spread to *-k'*, *-p*, and *-tz*, giving rise to *-k'-aj*, *-p-aj*, and *-tz'-aj*. The time when *-h-...-aj* would have begun to be reanalyzed as composed of two separate morphemes, *-h-* and *-aj*, may probably be identified with the pre-Classic Ch'olti'an stage defined by Houston et al. (2000) where, according to these authors, the *-aj* of **-h-...-aj* influenced the **-V₁l* participial positional, resulting in the development of an intransitive positional **-l-aj* (-*V₁l+aj*). The *-aj* would have completed its reanalysis as *thematic* when, in Classic Ch'olti'an, *-h-...-aj* finally adopted the function of passive of CVC root transitives and *-aj* spread to the other Eastern Ch'olan *-n* and *-w* passives of non-CVC transitive verbs, giving uniformity to the passive derivational paradigm.

90. Other examples of positionals being inflected by *-h-...-aj* are found elsewhere in the Classic texts, as at Late Classic Toniná, where CHUM-ji-ya / CHUM-mu-ji-ya, *chu[h]mjiiy*, *chu-h-m-(a)j-ø-iiy* forms are documented (Lacadena and Wichmann 2000). The reconstruction of **-h-...-aj* as the intransitive positional is not exclusive of pre-Classic Ch'olti'an, but would also have been present in Tzeltalan, both supposedly having inherited it from an earlier stage before Ch'olan and Tzeltalan split up. Thus, the Early Classic *-h-...-aj* intransitive positional from Tikal and the Late Classic Toniná *-h-...-aj* intransitive positional examples, although historically related, have to be interpreted in different ways. As already suggested in Lacadena and Wichmann (2000), the Toniná *-h-...-aj* examples on positionals may be interpreted as a percolation in the script of Tzeltalan morphology, suggesting that the vernacular language spoken in the Toniná area would be of Tzeltalan derivation. Unlike Eastern Ch'olan, where *-h-...-aj* was displaced by *-l-aj* in the derivation of intransitive positionals, Tzeltalan retained **-h-...-aj* in the function of marking the intransitive positional, a pattern still found in modern Tzeltal (Kaufman 1971).

91. For historical reasons that are still not well understood, Eastern Ch'olan antipassives continue to stand out from the large class of derived intransitives by not taking the *-a* (< **-aj*) thematic suffix. Thus, for example, the *-a* suffix never combines with the Ch'orti' antipassive suffixes *-an*, *-on*, *-o*, *-wan*, and *-ma*, a distributional characteristic that distinguishes these from the *-h-...-a*, *-n-a*, *-w-a* passives and the *-k'-a*, *-p-a*, *-tz'-a* mediopassives. Interestingly, the absence of the thematic suffix in Ch'orti' antipassive derivation is also characteristic of Classic *-Vn*, and *-Vw* antipassives (cf. Lacadena 2000), which similarly do not take the *-aj* suffix.

A full discussion of whether the designation *thematic* adequately describes the nature of the *-aj* > *-a(h)* > *-a* suffix in Eastern Ch'olan exceeds the purposes of this paper. The question relates to the whole understanding of the verbal morphological system in Eastern Ch'olan, where traditionally a large set of suffixes—not only this *-a* on passives and mediopassives but also certain suffixes found on root and derived transitives and other intransitives—have been described as *thematic* since Fought's 1967 description of Ch'orti' morphology. Whatever new explanations of the morphological nature of the *-aj* > *-a(h)* > *-a* suffix in passive contexts the future may hold, they are not likely, however, to modify the external shape of the paradigm of glyphic passive derivation of CVC and non-CVC transitive verbs proposed here. While I remain open to prospective alternative characterizations in future debates over the precise nature of the so-called thematic suffixes in Eastern Ch'olan, for the purposes of this paper I choose to retain the label *thematic* for the *-aj* suffix involved in passive constructions. This choice of terminology is mainly aimed at highlighting the point that, in the hieroglyphic grammar, *-aj* is *not* a passive marker.

General Passive Formation in the Glyphic Texts

In Lowland Mayan languages passives are always explicitly marked as such morphologically. The same is to be expected from the language represented in the glyphic texts, where we should then also try to identify the passive morphemes used. If in passive contexts the *-aj* suffix discussed above is not a passive morpheme but a thematic suffix for derived intransitives, how, then, is the passive derivation indicated in the hieroglyphic grammar?

To answer this question we must first of all be prepared to encounter the same fundamental verb classes found in Lowland Mayan languages at large, distinguishing between two main classes of transitive verbs. A first class would include verbs that have the phonological shape consonant-vowel-consonant, usually called *CVC root transitive verbs*, like *chuk* 'seize, capture', *tz'ap* 'drive-into-ground', or *muk* 'bury'. A second class would include all the other transitive verbs (i.e., verbs that do not have a CVC shape). Such verbs are usually called *derived transitive verbs*, but are better understood as *non-CVC transitive verbs*.⁹² Verbs that belong to this second class are those that have phonological shapes different from CVC, like VC, VCV, CVhC, VCVC, or CVCVC, or that are truly derived from nouns, adjectives, or intransitive verbs through verbalizing and transitivity suffixes like *-a*, *-t*, or *-Ø*, or the causativizing *-b'ul-b'a*, and *-(e)s(e)* suffixes. This distinction between CVC root transitives and non-CVC root transitives is of great importance for the understanding of the passive derivation since, in Lowland Mayan languages, these two classes of transitive verbs form the passive voice in different ways.

With respect to Classic Maya passive derivation, my contention is that there are two main passive constructions: the first one derives passives from CVC root transitives; the second one derives passives from non-CVC root transitives.

92. Some of the verbs belonging to this class are truly derived, like the ones that have undergone the causative derivation. Other verbs, however, are not derived, and nevertheless still belong to this class. I thank B. Macleod and T. Kaufmann for clarifying this question in our conversations in 1997 and 1998 during the Maya meetings in Austin.

Passive of CVC Root Transitive Verbs: The -h- Infix

The passive derivation of CVC root transitives is made by infixing a *-j-* passive morpheme after the root vowel in Ch'ol⁹³ (Aulie and Aulie 1978: 191; Warkentin and Scott 1980: 64) and Ch'orti⁹⁴ (Fought 1967: 192–94; Dayley 1990: 372; Kaufman and Norman 1984: 108–09),⁹⁵ and also supposedly in Ch'olti.⁹⁶ Only Acalan Chontal and modern Chontal differ from the other Ch'olan languages in the passive derivation of CVC root transitives, making use of a *-c* (/k/) suffix (Smailus 1975: 194–95; Keller and Luciano 1997: 456–57), which seems to be an innovation within the Ch'olan languages.⁹⁷ From this evidence—the presence of a *-h-* passive infix in both Ch'olan subgroups—a passive derivation of CVC root transitives of the shape *CVhC can be reconstructed for proto-Ch'olan (Kaufman and Norman 1984: 109).⁹⁸

Acalan Chontal inflects the resultant passive form for aspect suffixing *-el* in the incomplete and *-i* in the completive (Smailus 1975). Modern Chontal suffixes *-an* in the incomplete and *-i* in the completive (Keller and Luciano 1997: 456–57). Ch'ol suffixes *-el* in the incomplete and *-i(y)* in the completive (Warkentin and Scott 1980: 64). The three mark the subject by means of ergative pronouns in the incomplete and by means of absolutive pronouns in the completive following a split-ergative system. However, as mentioned above in the discussion of the function of the *-aj* suffix, Ch'olti and Ch'orti' suffix the resultant passive form with the *-a(h)/-a* thematic for derived intransitives. As for aspect, Ch'olti suffixes *-al* in the incomplete and *-Ø* in the completive, marking the subject by ergative pronouns in the incomplete and by absolutive pronouns in the comple-

93. The *j-* infixation is used with CVC root transitives that do not end in the fricatives /x/, /h/, and /s/. Those that end in one of these fricatives instead take *-tāl* in the incomplete and *-l-e(y)* in the completive (Warkentin and Scott 1980; Bricker 1986).

94. Fought and Dayley point out that the Ch'orti' *-h-* passive infix, along with a simple passive meaning, also has a potential meaning in the incomplete: *in-xujr-a*, 'soy cortado/puedo ser cortado' ('I am cut/I can be cut').

95. Some confusion is found in works referring to the Ch'orti' passive derivation of CVC root transitive verbs, where some other suffixes, like *-tz'*, *-k'*, and *-p* have also been considered passive morphemes. The only passive derivation of CVC root transitive verbs in Ch'orti' is made by the *-j-* infix. The morphemes *-tz'*, *-k'*, and *-p* are actually mediopassive markers (Wichmann 1999). The origin of the confusion can be traced to Morán's description of passive derivation in Ch'olti', where he described these morphemes as passive markers (Morán 1935a). Ch'orti' *-tz'*, *-k'*, and *-p* mediopassives come from proto-Mayan **-tz'*, **-k'*, and **-p* (Kaufman 1986). The confusion has been maintained mostly due to inaccurate translations of passive and mediopassive forms, which are close in meaning.

96. "Presumably, Cholti passives of the form *CVC-a* such as *paz-a* 'be shown', *chap-a* 'be cooked' (Morán 1935a: 17) were pronounced CVjC-a, though the preconsonantal *j* in these forms is never written" (Kaufman and Norman 1984: 108).

97. Some confusion is also found with regard to Chontal passive derivation, where *-c* and *-Vnt/-int* are considered allomorphs, indistinctively used for CVC and non-CVC transitive verbs, both in Acalan and modern Chontal. In Acalan Chontal, *-c* is found as the passive morpheme for both CVC (*pulcel*, *mucel*) and non-CVC root transitives (*bixteçcel*, *canteçcel*); *-Vnt*, however, only derived passives of non-CVC transitives (*katantel*, *albintel*, *chamçintel*, *ch'ach'anintel*) (Smailus 1975: 195). In modern Chontal, according to Keller and Luciano (1997: 456–57), *-cl-qu* derives passives of CVC root transitives (their Class I), while *-int* derives passives of non-CVC root transitive verbs (their Class II).

98. According to the reconstruction of Houston et al. (2000), the Ch'ol *-j-* and Ch'olti'/Ch'orti' *-j-* passive morphemes would not have the same history.

tive (Kaufman and Norman 1984). Ch’orti’ marks aspect by the differential use of pronouns, prefixing Set C pronouns in the incompletive and suffixing absolutive pronouns in the completive (Fought 1967).

The following is a summary of the whole Ch’olan paradigm of passive derivation of CVC root transitives:

	Incompletive	Completive
ACH	ERG-CVC- <i>c-el</i>	CVC- <i>c-i</i> -ABS
CHN	ERG-CVC- <i>c-an</i>	CVC- <i>c-i</i> -ABS
CHL	ERG-CV- <i>h-C-el</i>	CV- <i>h-C-i(y)</i> -ABS
	ERG-CVC- <i>täl</i>	CVC- <i>l-e(y)</i> -ABS
CHT	ERG-CV- <i>[h]-C-a-al</i>	CV- <i>[h]-C-a</i> -ABS
CHR	SETC-CV- <i>h-C-a</i>	CV- <i>h-C-a</i> -ABS

The whole Ch’olan passive derivation system may be illustrated as follows, using the verb *chuk* ‘to capture, seize’ inflected for third person singular:⁹⁹

	Incompletive ‘it is captured’	Completive ‘it was captured’
ACH	u-chuk- <i>k-el</i>	chuk- <i>k-i</i> -Ø
CHN	u-chuk- <i>k-an</i>	chuk- <i>k-i</i> -Ø
CHL	i-chu- <i>j-k-el</i>	chu- <i>j-k-i</i> -Ø
CHT	u-chu- <i>[h]-k-a-al</i>	chu- <i>[h]-k-a</i> -Ø
CHR	a-chu- <i>j-k-a</i>	chu- <i>j-k-a</i> -Ø

It is my proposal that the glyphic passive derivation of CVC root transitive verbs follows the same passive derivational pattern that is described for Eastern Ch’olan (highlighted by bold letters in the paradigms). I suggest that the *-h-* passive infix reconstructed for proto-Ch’olan and still attested in Ch’ol and Ch’orti’ (and very probably also in Ch’olti) was also present in Classic times and was intended to be pronounced in passive contexts, although it was not written glyphically. As I have already suggested, the resultant CV-*h*-C passive form is suffixed by an *-aj* suffix in the same way that Eastern Ch’olan CV-*h*-C passives of CVC root transitive verbs are suffixed by the *-a(h)* thematic. Taken as a paradigm, I suggest that the glyphic form transcribed as **chu-ka-ja** must be transliterated *chu[h]kaj* and analyzed *chu-h-k-aj-Ø*, where *chuk* ‘to capture, seize’ is the CVC root transitive, the *-h-* infix—which is not spelled in the transcription but is to be reconstructed in the transliteration—is the actual passive marker, *-aj* is the thematic suffix of derived intransitives, and *-Ø* is the absolutive pronoun marking the third person-singular intransitive subject, as in Figure 7.3a.

chu-ka-ja a-K’AN-na u-si-ja b’u-ku-TUN-ni-AJAW u-b’a-ki ITZAMNAJ-B’ALAM
chu[h]kaj Aj[j]k’an Usii, B’uktuun ajaw; ub’aak Itzamnaaj B’ahlam

99. Graphics are uniformized such that in ACH, CHN, CHL, CHT, and CHR “c” and “qu” are rendered as “k.”



Figure 7.3. Examples of passive derivation of CVC transitives as CV-h-C-aj. (a) **chu-ka-ja**, *chu[h]kaj* ‘was seized, captured’ on Yaxchilan Lintel 46, F3-G5 (after Graham 1979: 101). (b) **tz’a-pa-ja**, *tz’a[h]paj* ‘was driven-into-ground’, on Arroyo de Piedra Stela 2 (after drawing by S. Houston). (c) **cho-ka-ja**, *cho[h]kaj* ‘was cast’, on Quirigua Stela F (after drawing by M.Looper). (d) **mu-ka-ja**, *mu[h]kaj* ‘was buried’, on Piedras Negras L3 (after drawing by J. Montgomery). (e) **TZUTZ-ja**, *tzu[h]tz[aj]* ‘was finished’, on Arroyo de Piedra Stela 2 (drawing by S. Houston). (f) **TZAK-ja**, *tza[h]k[aj]* ‘was conjured’, on Yaxchilan Stela 35 (drawing by P. Mathews).

chu-h-k-aj-Ø Ajk’an Usii B’uktuun ajaw; u-b’aak-Ø Itzamnaaj B’ahlam

capture-[PASS]-THEM-3SA Ajk’an Usii, B’uktuun king; 3SE-captive-3SA Itzamnaaj

B’ahlam

‘Ajk’an Usii, king of B’uktuun, was captured; he is the captive of Itzamnaaj B’ahlam’.¹⁰⁰

Consequently, all the other passive forms of CVC root transitives transcribed as CV-Ca-ja or CVC-Ca-ja have to be transliterated CV[h]Caj—or as CV[h]C[aj] if the spelling is abbreviated as CVC-ja, for example:

CHOK-ja, *cho[h]k[aj]* / **CHOK-ka-ja** / **cho-ka-ja**, *cho[h]kaj* ‘be cast, scattered’

CH’AK-ka-ja / **ch’a-ka-ja**, *ch’a[h]kaj* ‘be chopped, decapitated’

jo-ch’a-ja, *jo[h]ch’aj* ‘be drilled’

ka-cha-ja, *ka[h]chaj* ‘be tied’

K’AL-ja, *k’a[h]l[aj]* / **K’AL-la-ja** / **k’a-la-ja**, *k’a[h]laj* ‘be tied, wrapped’

k’u-xa-ja, *k’u[h]xaj* ‘be eaten’

ma-ka-ja, *ma[h]kaj* ‘be covered, closed’, ‘be betrothed’

mu-ka-ja, *mu[h]kaj* ‘be buried’

na-wa-ja, *na[h]waj* ‘be adorned’

pa-sa-ja, *pa[h]saj* ‘be opened’, ‘be uncovered’

su-sa-ja, *su[h]saj* ‘be shaved, peeled’

te-k’a-ja, *te[h]k’aj* ‘be stepped on’

ti-ma-ja, *ti[h]maj* ‘be satisfied, appeased’

tu-ta-ja, *tu[h]taj* ‘be covered, filled; renewed’

TZAK-ja, *tza[h]k[aj]* ‘be grasped; conjured’

TZUTZ-ja / **tzu₂-ja**, *tzu[h]tz[aj]* / **tzu-tza-ja**, *tzu[h]tzaj* ‘be finished, completed’

tz’a-pa-ja, *tz’a[h]paj* ‘be driven into ground, sink’

ya-la-ja, *ya[h]laj* ‘be thrown’

100. In this example, ‘Ajk’an Usii, king of B’uktuun’ is the subject of the passive verb *chu[h]kaj* ‘was captured’; although he is mentioned, Itzamnaaj B’ahlam, the agent of the action, does not belong to the passive sentence, but is referred to in an appended stative sentence. In many other cases, the agents of the passive verbs are simply omitted.

The examples in Figure 7.3b–f are transliterated similarly:

i-tz'a-pa-ja u-LAKAM-TUN

i tz'a[h]paj ulakam tuun

i tz'a-h-p-aj-Ø u-lakam tuun

FOC drive-into-ground-[PASS]-THEM-3SA 3SE-big stone

'and then his big stone (stela) was driven-into-ground'

cho-ka-ja-ch'a-ji

cho[h]kaj ch'aaj

cho-h-k-aj-Ø ch'aaj

cast-[PASS]-THEM-3SA incense

'incense was cast'

mu-ka-ja HO'-JANAB'-WITZ UX-"K'ATUN"-AJAW

mu[h]kaj Ho' Janaab' Witz Ux "K'atun" ajaw

mu-h-k-aj-Ø Ho' Janaab' Witz Ux "K'atun" ajaw

bury-[PASS]-THEM-3SA Ho' Janaab' Witz three "k'atun" lord

'The three k'atuns lord was buried (at) Ho' Janaab' Witz'

TZUTZ-ja HO'LAHUN-"K'ATUN"

tzu[h]tz[a]j ho'lahu'n "k'atun"

tzu-h-tz-aj-Ø ho'lahu'n "k'atun"

finish-[PASS]-THEM-3SA fifteen "k'atun"

'the fifteen k'atun was finished'

TZAK-ja K'AWIL

tza[h]k[a]j K'awiil

tza-h-k-aj-Ø K'awiil

conjure-[PASS]-THEM-3SA K'awiil

'K'awiil was conjured'

In all these examples the passive morpheme is the reconstructed *-h-* infix, and *-aj* is the thematic suffix for derived intransitives.¹⁰¹

101. Some spellings do not conform to this pattern. Instead of the usual CV-Ca-ja spellings, there are in the script some forms that conform to a rare CV₁-CV₁-ja pattern. Thus, instead of the more common **chu-ka-ja**, **jo-ch'a-ja**, or **mu-ka-ja** spellings, we find **chu-ku-ja**, **jo-ch'o-ja**, and **mu-ku-ja**. In an earlier version of this paper (dating to 1997) I considered the possibility that these CV₁-CV₁-ja spellings might have represented a way by which Maya scribes would indicate the *-h-* passive infix. However, since such spellings are restricted to the western lowland region (see Lacadena and Wichmann 2002), perhaps some other—not yet well understood—phenomenon is involved in this case, possibly having to do with dialectal variation or competing norms of regional scribal school conventions. Some other aberrant spellings mentioned in the 1997 manuscript were the doubling of the second consonant of the CVC root, as in **chu-ku-ka-ja**, attested at Yaxchilan and Palenque, and **tz'a-pa-pa-ja**, attested at Copan. The following are two quotations (with slight linguistic revisions and an orthography modified to match that of the present paper) from what I wrote in 1997:

"The **chu-ku-ka-ja** spellings of Palenque and Yaxchilan may reflect the *-c* (/k/) passive suffix attested in Classical Chontal (Smailus 1975: 194–95): **chu-ku-ka-ja**, *chukkaj*, *chuk-k-aj-Ø*. Although Palenque (as well as perhaps Yaxchilan) could well be seen as belonging in the Classic Period to a Chontal area, or

It could be considered strange that something as important as the *-h-* passive morpheme would not have been explicitly indicated in the script by Maya scribes, for example through the inclusion in the transcription of an *hV* sign. However, as a rule, */h/* was conventionally underspelled in preconsonantal (*hC*) position in the Maya hieroglyphic script (Lacadena and Wichmann, this volume). Glyphic evidence shows that preconsonantal */h/* was not written but has to be reconstructed from comparative linguistic evidence, as in *b'a-la-ma*, *b'a[h]lam* 'jaguar', *b'u-ku*, *b'u[h]k* 'clothes', *yi-tz'i-na*, *yi[h]tz'iin* 'his younger brother', *tz'i-b'i*, *tz'i[h]b'* 'painting, writing', *yi-ch'a-ki*, *yi[h]ch'aak* 'his claw', or *na-ba'*, *na[h]b'* 'quarter-rod (measure from thumb to little finger)', just to mention a few examples. Even when the underrepresentation of a preconsonantal */h/* might produce ambiguous readings, Maya scribes did not distinguish CVC and CVhC by means of different spellings. For example, the same spelling *K'AN-na* was read both as CVC *k'an* 'yellow, ripe'¹⁰² and as CVhC *k'ahn* 'bench, base, stool, chair, stair',¹⁰³ depending on the context. Thus, *K'AN-na* has to be transliterated *k'an* 'ripe' in Figure 7.4a.

at least to a more general Western Ch'olan area, some objections arise. If a Chontal passive suffix occurs, we should expect it to be accompanied by other features of the Chontal way of forming passives as well. In Classical Chontal we find the completive form *chucci*, *chuc-c-i-ø*, 'fue tomado' ('he/it was seized'), where *chuc* is the root transitive, *-c* is the passive suffix, *-i* is the completive marker for root intransitives, and *-ø* is the subject. The Chontal passive formation is thus different from the glyphic form under discussion in that the form is treated as a root intransitive rather than as a derived intransitive and in the (concomitant) absence of *-aj*. A way to explain what looks like a mixed form would be to hypothesize that the form *chukkaj* reflects a period of change with an emerging Western Cholan/Chontal branch innovating the *-k* (*-c*) passive suffix, but still using the *-aj* thematic suffix of derived intransitives; this would represent a state of affairs before the hypothetical assimilation of the derived intransitives by root intransitives.

"The *tz'a-pa-pa-ja* spelling on Copan Stela B (with the first *pa* syllable infixed in the *tz'a* sign) could make good sense as *tz'appaj*, *tz'ap-p-aj-ø*, where *tz'ap* would be the root transitive, *-p* a middle-passive suffix (intransitive reflexive) attested in Eastern Ch'olan (Fought 1967: 201; Dayley 1990: 372), *-aj* the thematic suffix of derived intransitives, and *-ø* the subject. In this case, the combination of the *-p* middle-passive suffix with the *-aj* thematic suffix is correct in an Eastern Ch'olan context (it is reasonable to accept Copan as belonging in the Classic Period to an Eastern Ch'olan area). Like passive constructions, middle-passive constructions in Eastern Ch'olan are also treated as derived intransitives and suffixed with the *-a* thematic suffix (Fought's [1967: 201] *-pa* suffix is better rendered as *-p-a*). So the *tz'a-pa-pa-ja* spelling at Copan may not be *tz'ahpaj*, *tz'a-h-p-aj-ø*, 'it was driven-into-the-ground', but *tz'appaj*, *tz'ap-p-aj-ø*, 'it drove-into-the-ground'."

102. Evidence for *k'an* as 'ripe'—closely related to 'yellow'—comes from CHN *c'än* 'sazón' (Keller and Luciano 1997: 68); CHR *k'ana* 'estar camagua' (Pérez Martínez et al. 1996: 108); YUC *k'aan* 'fruta madura o sazónada' (Bastarrachea et al. 1992: 99). Related entries for 'yellow' are widely attested in the Lowland Mayan languages: CHN *c'än* 'amarillo' (Keller and Luciano 1997: 68); CHL *c'änc'än* 'amarillo' (Aulie and Aulie 1978: 45); CHT *can* 'amarillo' (Morán 1935a: Voc.2), *cancan vmex*, *v hol* 'bermejo' (Morán 1935a: 12); CHR *k'ank'an* 'amarillo, anaranjado' (Pérez Martínez et al. 1996: 108–9); YUC *k'aan* 'amarillo, cosa amarilla' (Bastarrachea et al. 1992: 99); ITZ *k'an-lk'än* 'amarillo' (Hofling and Tesucún 1997: 374, 381); MOP *k'än* 'amarillo' (Schumann 1997: 266).

103. Evidence for *k'ahn* as 'bench, base, chair, stair' comes from CHT *can* 'almoada; tambien cabesera de otra cosa' (Morán 1935a: Voc.6), *can* 'cabeceira' (Morán 1935a: 13); CHR *k'ajn* 'silla, asiento, banca, mesa' (Pérez Martínez et al. 1996: 108); it can be found fossilized in CHN *c'änjo* 'almohada' (Keller and Luciano 1997: 69) and CHL *c'änjoläl* 'almohada' (Aulie and Aulie 1978: 45), literally meaning head-base or head-seat; although lacking in CHN and CHL, a preconsonantal */h/* can be reconstructed for *k'ahn* from CHR *k'ajn* (see above) and its reflexes in Yucatecan: YUC *k'áanche* 'banquillo,

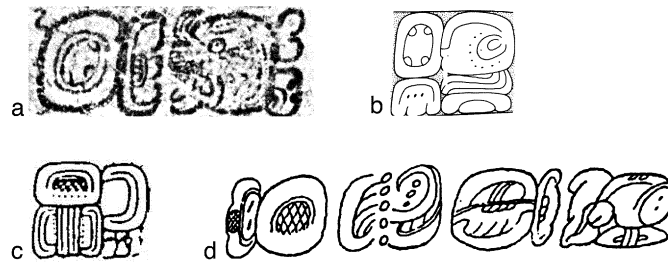


Figure 7.4. Underspellings of /h/ in preconsonantal position. (a) **K'AN-na ka-wa**, *k'an kaw* 'ripe cacao' on K625 (Kerr 1989, vol. I, p. 27). (b) **K'AN-na-TUN-ni-li**, *k'a[h]n tuunil* 'stone base' on Tonina Monument 95 (after Bequelin and Baudéz 1979–1982: fig. 125). (c) **pa-sa-ja**, *pa[h]saj* 'be opened', on Naranjo Stela 23, F18 (after Graham and Von Euw 1975). (d) **pa-sa-ja**, *pasaj* 'opening (dawn)', on Los Higos Alabaster Vase (after drawing by L. Schele).

K'AN-na ka-wa

k'an kaw

k'an kaw

ripe cacao

'ripe cacao'

But the same spelling **K'AN-na** has to be transliterated *k'a[h]n* 'bench, base, stool, chair, stair' in other cases, as in Figure 7.4b.

K'AN-na-TUN-ni-li

k'a[h]n tuunil

k'ahn tuun-il

base stone-POS

'stone base'

In sum, considering that the passive derivative morpheme of CVC root transitive verbs is reconstructed as **-h-* in proto-Ch'olan, having the reflex *-j-* in both Ch'ol and Ch'orti' (and likely also in Ch'olti) and considering the convention of the Maya script according to which /h/ is underspelled in preconsonantal position, the reconstruction of a *-h-* infix in the passive derivation of CVC root transitive context is justified not only linguistically but also epigraphically.

The reconstruction of the underspelled *-h-* passive infix in the transliteration is of great importance since CV-Ca-**ja** and CVC-**ja** spellings may in some cases be ambiguous. The ambiguity arises because in the hieroglyphic grammar, just as in the modern Ch'olan languages, there are other *-aj* suffixes different from the *-aj* thematic on passive forms. One is the *-aj* allomorph of a *-Vj* (*-aj* ~ *-iij*) verbalizing suffix that is cognate with Tzeltalan (several allomorphs depending on context) *-Vj* (*-aj-äj* ~ *-ij-iy*) intransitivisers; this derives intransitive verbs from nouns, for example, **a-AHK'-ta-ja**, *ahk'taj*, *ahk't-aj* 'to dance', from

lugar donde se asienta algo, objeto o cosa que sirve para sentarse' (Bastarrachea et al. 1992: 99); ITZ *k'an-che* 'asiento, silla' (Hofling and Tesucún 1997: 374), *k'an-jo'ol* 'almohada'/pillow' (Hofling and Tesucún 1997: 374); MOP *k'aanche* 'escalera' (Schumann 1997: 266).

ahk'ot 'dancing', or **pi-tzi-ja**, *pitzij*, *pitz-ij* 'to play ball', from *pitz* 'ball playing' (Lacadena, in press). Another homophonic suffix is the *-aj* nominalizer that derives verbal nouns from transitive verbs.¹⁰⁴ Both can produce ambiguities. For example, compare the following two glyphic examples involving the verb *pas* in its two senses of 'to uncover' and 'to open'¹⁰⁵ (Figure 7.4c and d):

pa-sa-ja u-b'a-ki u-JOL YAX-B'OLON-CHAK YAX-a-AJAW

pa[h]saj ub'aak ujol Yax B'olon Chaahk, Yaxa['] Ajaw

pa-h-s-aj-Ø u-b'aak u-jol Yax B'olon Chaahk, Yaxa' ajaw

uncover-[PASS]-THEM-3SA 3SE-bone 3SE-skull Yax B'olon Chaahk Yaxa' king
'The bones (and) the skull of Yax B'olon Chaahk, king of Yaxa', were uncovered'.

and

YAX-pa-sa-ja CHAN-na YOP-AT-ta

Yax Pasaj Chan Yop At

yax pas-aj-Ø chan Yop At

first open-NOM-3SA sky Yop At

'Yop At is the First Opening ('dawn') in the Sky.'¹⁰⁶

As can be seen, because of the glyphic convention of underspelling preconsonantal /h/'s, one and the same spelling—**pa-sa-ja**—may call for two different transliterations: *pa[h]saj* in one case, and *pasaj* in the other, two forms that produce important differences in the understanding and translation of the sentences. In the first example, **pa-sa-ja** has to be transliterated as a passive, *pa[h]saj* 'be uncovered', where the infix passive morpheme *-h-* is reconstructed in the transliteration; in the second example, **pa-sa-ja** is not to be reconstructed as *pa[h]saj*, which would be a passive and would fail to make any sense in the context of the theonym, but as *pasaj* 'opening', a nominalized form of *pas* 'to open.' Transcription and transliteration are two very different steps in the reading of a text, and have to be carefully distinguished.¹⁰⁷

The underspelling of /h/ in preconsonantal position was a writing convention in Maya hieroglyphic script. Just as we do now, the Maya readers for whom the inscriptions were

104. The *-aj* nominalizer suffix to which I am referring to is cognate with an *-a* suffix attested in Chontal and Ch'ol and the ancestor of the *-aj* suffix attested in Ch'orti'. Cf., for example, Chontal *tzäm-se-n* 'to kill', *tzäm-s-a* 'killing'; Ch'ol *cän-t-es-an* 'to teach', *can-t-es-a* 'teaching'; Ch'orti' *b'ajy-u* 'to touch', *b'ajy-s-aj* 'touchment, touching', *wajr-i* 'to blow', *wajr-s-aj* 'a blow, blowing'.

105. *Pas* has the general meaning of 'to open'. In Chontal, *päs-e* also has the meaning of 'desenterrar, sacar de debajo de la tierra' ('uncover') (see Keller and Luciano 1997: 188). In the context of bones, a meaning of 'to uncover' fits the context better than 'to open'. Thus, the translation should be 'the bones were uncovered', and not, as it is usually translated, 'the bones were opened'.

106. I follow a recent suggestion of D. Stuart (personal communication, 2000) about the polyvalent reading of T115 as phonetic *yo* and logographic **YOP**.

107. The confusion between *-aj* thematic of derived intransitives involved in passive constructions and the *-aj* nominalizer of transitive verbs is responsible for the existence of apparent pairs like

VERB-*aj* u-VERB-*aj*

which have been interpreted as evidence for split ergativity in the script. However, there are actually no such related examples. The first one may be a passive; the second one is a possessed nominalized form.

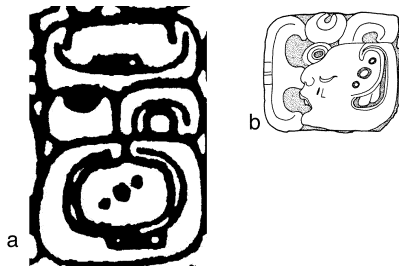


Figure 7.5. *Nahwaj* ‘be adorned’ spelled as **na-wa-ja** and **NAH-wa-ja**. (a) **na-wa-ja**, *na[h]waj*, on Piedras Negras Stela 3, D2 (after drawing by J. Montgomery). (b) **NAH-wa-ja**, *nahwaj*, on Palenque Temple XVIII, Fallen Stuccos, n. 446 (after Schele and Mathews 1979).

intended had to reconstruct it based on context. There are, however, a few instances where the Maya scribes managed to explicitly write such an /h/—including cases of passives, which is what interests us here. These cases clear away any doubt that the passive infix *-h-* was really there in the language, and bring support to my suggestion that they should be reconstructed in the transliteration. Thus, for example, although the common way to spell the passive of the CVC root transitive verb *naw* ‘to adorn’ was **na-wa-ja**, *na[h]waj*, *na-h-w-aj* ‘be adorned’, at Palenque, an interesting spelling **NAH-wa-ja**, *nahwaj* (identified by M. Zender, personal communication, 2000) shows that a preconsonantal /h/ was actually there and therefore intended to be read in such a passive context. Compare how the passive *nahwaj* is spelled in Figure 7.5a–b:

na-wa-ja
na[h]waj
na-h-w-aj-Ø
 adorn-[PASS]-THEM-3SA
 ‘is adorned’

and

NAH-wa-ja
nahwaj
na-h-w-aj-Ø
 adorn-[PASS]-THEM-3SA
 ‘is adorned’

In this second example of **NAH-wa-ja**, the *-h-* passive infix is not to be reconstructed in the transliteration as *[h]* because it is already there in the transcription, exceptionally but clearly indicated by the Palenque scribe through the ingenious rebus use of the **NAH** ‘house’ logogram.

Passive of Non-CVC Transitive Verbs: The -n Suffix

In Western Ch’olan the passivization of non-CVC root transitive verbs is made in a more uniform way than is the case with CVC root transitive verbs. In Acalan Chontal this passive is made by suffixing *-Vnt* {V= a, i} to the verbal stem (Smailus 1975: 194–95), in modern Chontal by means of the suffix *-int* (Keller and Luciano 1997: 456–57), and in Ch’ol by means of *-nt* (Warkentin and Scott 1980: 64). The passive form is inflected for aspect in the incomplete by *-el* in Acalan Chontal, *-e* in modern Chontal and *-el* in Ch’ol; the

completive is marked by *-i* in Acalan and modern Chontal and *-i(y)* in Ch'ol (Bricker 1986: 32–33). All three languages mark the subject with ergative pronouns in the incomplete and absolutive pronouns in the completive.

Moving to Eastern Ch'olan, we find that the Ch'orti' passive of non-CVC root transitive verbs is derived through an *-n* suffix. As is the case with passives derived from CVC root transitives, the resultant passive verb also carries the *-a* thematic suffix for derived intransitive verbs, producing the string *-n-a* (Fought 1967: 219–21, 1984: 54;¹⁰⁸ Dayley 1990: 372; Kaufman and Norman 1984: 109). Ch'orti' also has a second passive derivation of non-CVC root transitive verbs, which is characterized by a *-w* suffix (Fought 1972: note 4.80; MacLeod 1984: 246–47; 1987: 79–80). This also takes the *-a* thematic for derived intransitives, producing *-w-a*. Passives in *-n-a* and *-w-a* are phonologically conditioned, *-w-a* being used with stems in a final /n/, but in some cases both are found on stems that do not have a final /n/.¹⁰⁹ Ch'orti' marks aspect by the differential use of pronouns, prefixing Set C pronouns in the incomplete and suffixing absolutive pronouns in the completive (Fought 1967; Kaufman and Norman 1984). For example, in Ch'orti':

<i>uw-ir-a-Ø</i>	'he sees/saw it'	<i>ir-n-a-Ø</i>	'it was seen'
<i>u-kojr-i-Ø</i>	'he pulps/pulped it'	<i>kojr-n-a-Ø</i>	'it was pulped'
<i>u-cham-se-Ø</i>	'he kills/killed him'	<i>cham-se-n-a-Ø</i>	'he was killed'
<i>u-tz'ijb'-a-Ø</i>	'he paints/painted it'	<i>tz'ijb'-n-a-Ø</i>	'it was painted'
<i>u-pajn-i-Ø</i>	'he digs/dug it'	<i>pa'n-w-a-Ø</i>	'it was dug'
<i>in-takr-e-Ø</i>	'I help/helped him'	<i>takar-w-a-Ø</i>	'he was helped'

The immediate ancestor to Ch'orti' *-n-a* passivization of non-CVC root transitive verbs is seventeenth-century Ch'olti *-n-a(h)* (Kaufman and Norman 1984). For aspect, Ch'olti suffixes *-el* in the incomplete and *-Ø* in the completive, marking the subject by ergative pronouns in the incomplete and absolutive pronouns in the completive (Bricker 1986). Morán's *Arte* (1935a) contains several examples of the passivization of non-CVC root transitives through *-n-a(h)*, for example:

<i>em-ze-n-a-el</i>	'be lowered'
<i>chobb-e-n-ah-el</i>	'be saved'
<i>tzatz-bu-n-ah-el</i>	'be helped'

The proto-Eastern Ch'olan passive derivation for non-CVC root transitive verbs has been reconstructed as **-n-aj* (Kaufman and Norman 1984: 109).

Thus, the paradigm of passive derivation of non-CVC transitives in the Ch'olan languages is:

	Incomplete	Completive
ACH	ERG-non-CVC- <i>Vnt-el</i>	non-CVC- <i>Vnt-i-ABS</i>
CHN	ERG-non-CVC- <i>int-e</i>	non-CVC- <i>int-i-ABS</i>

108. Fought analyzes this suffix string as a single suffix, *-na*. I follow Kaufman and Norman (1984: 109) and Dayley (1990: 372) in analyzing it as *-n-a*.

109. Field notes collected by me in Jocotan (Chiquimula, Guatemala) during August 1998. Cf. also Wichmann (1999: 60).

CHL	ERG-non-CVC- <i>nt-el</i>	non-CVC- <i>nt-i(y)</i> -ABS
CHT	ERG-non-CVC- <i>n-a(h)</i> -el	non-CVC- <i>n-a(h)</i> -ABS
CHR	SETC-non-CVC- <i>n-a</i>	non-CVC- <i>n-a</i> -ABS
	SETC-non-CVC- <i>w-a</i>	non-CVC- <i>w-a</i> -ABS

Just as we found the Eastern Ch'olan passive derivation of CVC root transitive verbs through CV-*h*-C-*aj* to recur in the Classic grammar, the inscriptions also follow the Eastern Ch'olan pattern with respect to the passive derivation of non-CVC transitives (highlighted in bold letters in the preceding paradigm). In the glyphic texts we thus recognize the exact same passive derivation of non-CVC transitives through *-na-ja*, *-naj*, *-n-aj*, where *-n* is the passive morpheme and *-aj* the thematic suffix that marks the form as a derived intransitive verb.

The best attested example in the Classic texts of the passive derivation of a non-CVC root transitive is the passivization of the verb *tz'ihb'a*, *tz'ihb'-a* 'to paint, write', a verb derived from the noun *tz'ihb'* 'painting, writing.' It was Stuart (1987) who first noted a term for 'painting, writing' in the texts as part of his arguments for his decipherment of the **tz'i** syllable. The root, identifiable in many different morphological contexts, such as **a-tz'i-b'i**, **ya-tz'i-b'i**, **a-TZ'IB'-b'a-li**, **u-tz'i-b'i**, **u-tz'i-b'a**, **u-tz'i-b'a-li**, **tz'i-b'a-la**, **u-tz'i-b'a-li-na-ja**, **u-tz'i-b'a-li-NAH-ja-la**, **tz'i-b'i-na-ja**, **u-tz'i-b'i-na-ja**, **u-tz'i-b'i-na-ja-la**, must be transliterated *tz'i[h]b'*.¹¹⁰

In Lowland Mayan languages, *ts'ihb'* (or *tz'üib* in Yucatec and *tz'üib* in Itzaj and Mopan) is actually not a verb but a noun meaning 'painting, writing.' To be used as a transitive verb 'to paint, write', *tz'ihb'* must first be verbalized. In Ch'olan languages the suffix *-a* is attached to the noun *tz'ihb'* in order to form the active transitive verb *tz'ihb'-a* 'to write, to paint';¹¹¹ the *-a* suffix of *tz'ihb'-a* is related to a pM **-a* suffix reconstructed by Kaufman (1986: 166–70) as a verbalizer that derives transitive verbs with "factive" meaning from nouns. This **-a* verbalizer suffix would have the meaning of 'to make/do X.' Thus, from the noun *tz'ihb'* 'painting, writing', the transitive verb *tz'ihb'-a* 'to paint, write' is derived. In Yucatecan languages, where historically **-t* replaced **-a* as the transitivizer with factive meaning (Kaufman 1986: 169), *-t* is added to the noun *tz'üib/tz'üib* in order to derive the transitive verb *tz'üib-t-* 'to paint, write'.

The paradigm found in the glyphic texts is the Ch'olan one, differentiating the noun *tz'ihb'* 'writing, painting' from the transitive verb *tz'ihb'a* 'to paint, to write' by means of the *-a* transitivizer suffix. These two grammatically different categories, 'painting, writing' and 'to paint, write', are represented by two different glyphic spellings. Thus, **tz'i-b'i**, *tz'i[h]b'* spells the noun 'painting, writing' and **tz'i-b'a**, *tz'i[h]b'a* spells the verbal active form. For the latter example I suggest that the /a/ provided by the **b'a** syllable is to be

110. The reconstruction of a preconsonantal /h/ in *tz'ihb'* is provided by comparative phonology; cf. pM **tz'ihb* (Kaufman and Norman 1984), CHL *ts'ijb* 'letra, escritura' (Aulie and Aulie 1978: 122), CHR *tz'ihb* 'a painting or decorating, color, paint' (Wisdom 1950a: 205), YUC *tz'üib* 'escritura' (Bastarrachea et al. 1992: 126), ITZ *tz'üib* 'writing' (Hofling and Tesucun 1997: 640).

111. CHN *tz'ibän* 'escribir, apuntar' (Keller and Luciano 1997: 263); CHL *ts'ijban* 'escribir' (Aulie and Aulie 1978: 122), *ts'ijbun* 'escribir' (Aulie and Aulie 1978: 122); CHT *ziba*, *tziba* 'escriuir' (Morán 1935a: Voc, 29); CHR *tz'ijb'a* 'escribir, copiar, inscribir' (Pérez Martínez et al. 1996: 230), *tz'ihba* 'design, paint, decorate, write' (Wisdom 1950a: 205).

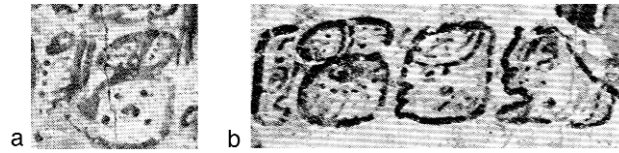


Figure 7.6. **tz'i-b'i**, *tz'i[h]b'* 'painting, writing', and **tz'i-b'a**, *tz'i[h]b'a* 'to paint, write'. (a) **a-tz'i-b'i**, *aj]tz'i[h]b'* 'painter, scribe', on K6020 (from the Kerr archives, at famsi.org). (b) **u-tz'i-b'a** **AKAN-SUTZ'**, *utz'i[h]b'a Ahkan Suutz'* 'Ahkan Suutz' painted it', on K1599 (Kerr 1989, vol. I, p. 100).

maintained in the transliteration rather than seen as a 'silent' vowel contributing information about the complexity of the preceding syllable through rules of disharmony. The /a/, then, I identify as the *-a* transitivizer suffix in active verbal contexts.¹¹²

The noun **tz'i-b'i**, *tz'i[h]b'* 'painting, writing' is found, among other places, in agentive expressions. In the grammar of the hieroglyphic script, as in the modern languages, agentive expressions derived by the *aj-* agentive prefix cannot be derived directly from transitive verbs, but only from nouns or verbal nouns (nominalized verbs). Thus, for example, in modern languages, 'painter, scribe' is *ajtz'ijb'*, *aj-tz'ijb'*, analyzable as *aj-* agentive plus *tz'ijb'*, the noun.¹¹³ In the script, the agentive expression 'painter, scribe', first recognized by Stuart (1987), is spelled **a-tz'i-b'i**, *aj]tz'i[h]b'* (Figure 7.6a) or, if possessed, **ya-tz'i-b'i**, *ya]j]tz'i[h]b'* (Houston 1993), and also derives the agentive from the noun:

a-tz'i-b'i
aj]tz'i[h]b'
aj-tz'ihb'
 AG-painting/writing
 'painter, scribe'

However, the suggested verbal form *tz'ihb'a*, spelled as **tz'i-b'a**, *tz'i[h]b'a*, *tz'ihb'-a*, is usually found in painters'/scribes' signatures. Compare the previous agentive expression built on **tz'i-b'i**, *tz'i[h]b'*, the noun, and the form that is commonly found in painters'/scribes' signatures:

u-tz'i-b'a
utz'i[h]b'a
u-tz'ihb'-a-Ø
 3SE-painting/writing-TRANS-3SA
 'he paints/painted it'

as in this example (Figure 7.6b):

u-tz'i-b'a **AKAN SUTZ'**
Utz'i[h]b'a Ahkan Suutz'

112. It was N. Hopkins (n.d.) who first suggested by 1989 that **u-tz'i-b'a**, in opposition to **u-tz'i-b'i**, represents the verbal form.

113. CHN *ajtz'ib* 'escritor, escribiente' (Keller and Luciano 1997: 29); CHL *ajts'ijb* 'escribano' (Aulie and Aulie 1978: 28), *sts'ijb* 'escriba' (Aulie and Aulie 1978: 106); CHT *ahzib* 'escribano' (Morán 1935a: Voc, 29); CHR *ah tz'ihb* 'painter, writer' (Wisdom 1950a: 205).

u-tz'ihb'-a-Ø Ahkan Suutz'
 3SE-painting/writing-TRANS-3SA Ahkan Suutz'
 'Ahkan Suutz' painted it'¹¹⁴

Interestingly, the formulaic expressions containing the painter's or scribe's signatures are usually based not on a possessed noun, which would be *u-tz'ihb'*, but on the active verb *u-tz'ihb'-a-Ø*. Thus, painters'/scribes' signatures are not normally to be understood and translated as 'the painting of', but as 'he painted it'. The expression *u-tz'i-b'i*, *utz'i[h]b'* 'the painting of' is also found in signature contexts, but in many fewer instances than the *u-tz'i-b'a*, *utz'i[h]b'a* forms (see for example Houston 2000: fig.5). The form *utz'i[h]b'* is ambiguous, since the 'painting' might belong not only to the artist that made it, but also to the person who owned the painted vase; the verbal expression *utz'ihb'a* 'he painted it' is not ambiguous, since it unequivocally relates the action of painting or writing to the artist or scribe who produced it, which would seem to provide more accuracy in signature contexts.

As already mentioned, Eastern Ch'olan derives passives from non-CVC root transitives by an *-n* passive suffix, followed by the *-a(h)/-a* thematic suffix for derived intransitives. *Tz'ihb'-a* 'to paint, write' is a non-CVC root transitive verb. In agreement with the paradigm of passive derivation, in Ch'olti its passive is made by suffixing *-n-a(h)* and in Ch'orti' *-n-a*. Compare the Ch'orti' active:

utz'ijb'a
u-tz'ijb'-a-Ø
 3SE-painting/writing-TRANS-3SA
 'he paints/painted it'

and its passive derivation:

tz'ijb'na
tz'ijb'-n-a-Ø
 paint/write-PASS-THEM-3SA
 'it was painted'

with the suggested glyphic active form:

u-tz'i-b'a
utz'i[h]b'a

114. A reading **AKAN** for the God A' logogram has recently been suggested by D. Stuart (personal communication, 2000) and N. Grube (2000). Comparative evidence shows that the original form should have been **ahkan*, with preconsonantal /h/, because of Ch'olan *ajkan* examples and their reflex as *áakan* in Yucatec: CHL *ajcän* 'gemido' (Aulie and Aulie 1978: 28); CHR *ajkna'r* 'gemido, quejido, lamento' (Pérez Martínez et al. 1996: 4); *ajkna* 'gemir' (Pérez Martínez et al. 1996: 5); YUC *áakam* 'lamento, quejido, bramido', 'quejarse, bramar, gemir' (Bastarrachea et al. 1992: 77); ITZ *akan* 'bramido'/'roar', 'bramar, rugir'/'bellow, roar' (Hofling and Tesucún 1997: 145–46). I will use, then, a plain **AKAN** value for the logogram in the transcription following Stuart's and Grube's decipherment, and an *ahkan* rendering in the transliteration of this glyphic example. The anthroponym Ahkan Suutz' would then mean 'Roar of Bat'.



Figure 7.7. Passive derivation of non-CVC transitives through *-n-aj*. **tz'i-b'i-na-ja**, *tz'i[h]b'naj* 'it was painted', on K2152 (Kerr 1990, vol. 2, p. 218).

u-tz'ihb'-a-Ø
 3SE-painting/writing-TRANS-3SA
 'he painted it'

and the passive derivation as proposed here:

tz'i-b'i-na-ja
tz'i[h]b'naj
tz'ihb'-n-aj- Ø
 paint/write-PASS-THEM-3SA
 'it was painted'

as on K2152, Kerr 1990, vol. 2 (Figure 7.7):

a-AL-ya tz'i-b'i na-ja yu-k'i-b'i ti-yu-ta ka-wa K'UH-cha-TAN-WINIK-ki
Al[a]y tz'i[h]b'naj yuk'ib' ti yuta[l] kaw¹¹⁵ k'uh[ul] Chatan winik
alay tz'ihb'-n-aj-Ø y-uk'-ib' ti y-ut-al kaw k'uh-ul Chatan winik
 here paint-PASS-THEM-3SA 3SE-drink-INST PREP 3SE-seed-POSS cacao god-ADJ
 Chatan man
 'Here¹¹⁶ it was painted the drinking-vessel for the seed of cacao of the holy Chatan man'

—or less literally, 'the Holy Chatan man's drinking-vessel for the fruit of cacao was painted here'.

As can be seen, the glyphic example follows exactly the same paradigm of passive derivation as Eastern Ch'olan, deriving the passive of non-CVC root transitives through *-n-aj*, where *-n* is the passive morpheme identical with *-n* in Ch'olti and Ch'orti' and where *-aj* is the thematic suffix, identical with Ch'olti *-a(h)* and Ch'orti' *-a*. Interestingly, both in the hieroglyphic examples and in modern Ch'orti', the *-a* transitivizer of *tz'ihb'-a* drops out in the passive derivation. Compare Classic **tz'i-b'i-na-ja**, *tz'i[h]b'naj*, *tz'ihb'-n-aj* and Ch'orti' *tz'ijb'na*, *tz'ijb'-n-a*.

The passive derivation of non-CVC transitive verbs through *-n-aj* is not as widely attested in the hieroglyphic corpus as the CV-*h*-C-*aj* passive derivation of CVC root transitives, which is documented in a large number of examples. Besides the most widely at-

115. I take **ka-wa** to spell *kaw*, not *ka[kaw]*. I consider it possible that there were two words for 'cacao' by Classic times, *kaw* and *kakaw*, where *kaw* would be the original term, which is found not only in the language of the script but also in some neighboring languages, and *kakaw* would be an innovation that finally replaced it (for a discussion of my suggestion cf. Dakin and Wichmann 2000: 66).

116. I transliterate **a-AL-ya** as *al[a]y* and translate it as 'here, this', following suggestions made in the past years by B. MacLeod, who has related the *alay* (or *a-lay*) expression to the Ch'olan forms *ilay*, *ila*, and *ali* and the Yucatecan form *lay*.

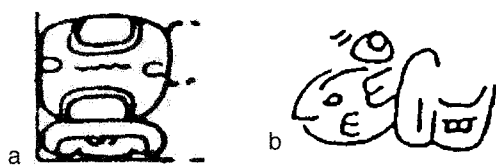


Figure 7.8. Other examples of *-n-aj* passive derivation of non-CVC transitives. (a) **B'AK-na-ja**, *b'aaknaj* 'be captured', on Tikal Temple 1, Lintel 3, A6 (after Jones and Satterthwaite 1982: fig. 70). (b) **u-BAT-lu-na-ja**, *uCVlnaj*, on Ek' Balam Miscellaneous Text 2 (drawing by A. Lacadena).

tested passive of non-CVC transitive, which is the one derived from *tz'ihb'a* 'to paint/write' and attested as **tz'i-b'i-na-ja**, *tz'i[h]b'naj* 'be painted' or, as a further derived nominalization thereof, **tz'i-b'i-na-ja-la**, *tz'ihb'najal* (see below), there are other verbs that attest to the proposed *-n-aj* passive derivation, for example,

B'AK-na-ja
b'aaknaj
b'aak-n-aj
 capture-PASS-THEM
 'be captured'

This presumably comes from a verbalized form *b'aak-#* 'to capture' (# = an unknown derivational suffix) derived from the noun *b'aak* 'captive'.¹¹⁷ It occurs in Figure 7.8a:

B'AK-na-[ja]
b'aaknaj
b'aak-n-aj-Ø
 capture-PASS-THEM-3SA
 'was captured'

Another example is:

u-BAT-lu-na-ja
uCVlnaj
uCVl-n-aj

117. Since the active form of the transitive verb derived from *b'aak* 'captive' is not attested in the script yet, it cannot be known with certainty how it would have been derived. Similar transitive derivations from nouns are found in the modern Ch'olan languages. For example, in Ch'orti', the active transitive verb derived from *k'ajk'* 'fire' is *k'ajk'-a* 'to fire anything, bake' (Wisdom 1950a: 142). As a non-CVC root transitive, its passive is made through *-n-aj*. Thus we get the active *u-k'ajk'-a-Ø* 'he bakes/baked it', the passive *k'ajk'-n-a-Ø* 'it was baked', and *k'ajk'-n-ib'* 'pit for open-fire cooking' (an instrumental). Another example would be the transitive verbal derivation *tz'ak-a* 'to cure with remedies' of the noun *tz'ak* 'remedy' (Wisdom 1950a: 203, 204), whose passive derivation is *tz'ak-n-a* 'be cured', as in *Sokoro tz'akna umen e ajniron* 'Socorro was cured by the curer' (Pérez Martínez et al. 1996: 227). Interestingly, in these two examples of the derived transitive forms *k'abk'-a* and *tz'ak-a*, as in *tz'ihb'-a*, the *-a* suffix of the active transitive form is dropped in the passive derivation, *-n-aj* being suffixed directly to the root (other verbs derived from nouns, like *b'utz'-a* 'to incense, smoke', from *b'utz'* 'smoke', do not drop the active suffix in the passive derivation, thus *u-b'utz'-a-Ø* 'he incenses/incensed it', *b'utz'-a-n-aj-Ø* 'it was incensed'). Therefore, although the exact active form of Classic *b'aak-#* 'to capture', derived from *b'aak* 'captive', is not known, the derivation *b'aak* 'captive' _ **b'aak-#* 'to capture' _ *b'aak-n-aj* 'to be captured' appears to be equivalent to the derivations *k'ajk'* 'fire' _ *k'ajk'-a* 'to fire anything, bake', _ *k'ajk'-n-a* 'to be baked', and *tz'ak* 'remedy' _ *tz'ak-a* 'to cure with remedies' _ *tz'ak-n-a* 'to be cured'.

carve-PASS-THEM
 ‘be carved’,¹¹⁸

derived from *uCVI*, probably a verbal noun, as on Ek’ Balam, Miscellaneous Text 2 (Figure 7.8b):

9-KAWAK 7-UN-wa u-BAT-lu-na-ja u-K’AN-na-chu u?-#-AJAW-#-ma-# [. . .
 9 *Kawak 7 Un[ii]w uCVlnaj uk’an Chu, U?. . . Ajaw, [Kalo’]m[te’]* [. . .
 9 *Kawak 7 Uniiw uCVI-n-aj-Ø u-k’an Chu, U?. . . Ajaw, Kalo’mte’* [. . .
 9 *Kawak 7 Uniiw carve-PASS-THEM-3SA 3SE-jewel Chu U. . . king Kalo’mte’* [. . .
 ‘(On) 9 Kawak 7 Uniiw it was carved the pendant of Chu, king of . . ., the Kalo’mte’
 [. . .’

—or, less literally, ‘(On) 9 Kawak 7 Uniiw the pendant of Chu, king of . . ., the Kalo’mte’, was carved’.

The similarity between the Classic passive derivation of non-CVC transitives and the Eastern Ch’olan passive derivation of the same class of verbs becomes even more remarkable when we compare how verbal nouns are further derived from the passive forms both in the Classic texts and in Eastern Ch’olan. In Ch’orti’, for example, passives of both CVC and non-CVC transitives are nominalized through an *-ar* suffix, which is directly suffixed to the *-a* thematic. Thus:

Passive	Verbal noun
<i>mujka</i>	<i>mujka’r</i> ¹¹⁹
<i>mu-j-k-a</i>	<i>mu-j-k-a-ar</i>
bury-[PASS]-THEM	bury-[PASS]-THEM-NOM
‘be buried’	‘burying’
<i>tz’ijb’na</i>	<i>tz’ijb’na’r</i>
<i>tz’ijb’-n-a</i>	<i>tz’ijb’-n-a-ar</i>
paint/write-PASS-THEM	paint/write-PASS-THEM-NOM
‘be painted/written’	‘painting/writing’

118. The ‘carving’ expression has traditionally been transliterated as (y)*uxul*— related to Tzendal *ux* ‘raspar como ladrillos’ (Ara 1986: 414) and Chontal *hushu(n)* ‘to rub, scrub’ (Knowles n.d.)—based on the decipherment of the bat-sign as **xu**, which was suggested by N. Grube. However, in recent times the **xu** reading has been disputed in favor of a **tz’i** value, suggested by D. Stuart. Moreover, it has also been suggested that it is possible the bat-sign might actually hide a set of two or three different bat-signs, each one with a different reading (M. Zender, personal communication, 2000). Therefore, I will represent the collocation of the bat-sign as BAT in the transcription and as CV in the transliteration, thus **u-BAT-lu-na-ja**, *uCVlnaj*. Although the precise reading of the bat-sign in ‘carving’ contexts is still unknown, a general meaning of ‘carving, carve’ for *uCVI* is, however, safe, as was firmly established some time ago (Stuart 1986).

119. Phonologically, Ch’orti’ *a-ar* becomes *a’r*.

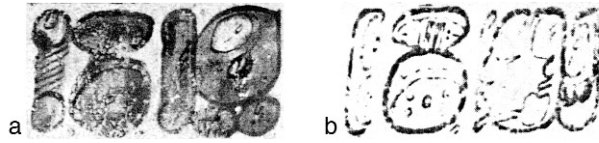


Figure 7.9. Nominalization through *-al*. (a) **u-tz'i-b'i-na-ja-la**, *utz'i[h]b'najal* 'its painting, the painting of', on K5722 (Kerr 1997, vol. 5, p. 819). (b) **u-tz'i-b'i-na-ja**, *utz'i[h]b'naja[l]*, on K2358 (Kerr 1990, vol. 2, p. 242).

Now compare the last-mentioned Ch'orti' example with the Classic:

tz'i-b'i-na-ja	u-tz'i-b'i-na-ja-la
<i>tz'i[h]b'naj</i>	<i>utz'i[h]b'najal</i>
<i>tz'ihb'-n-aj</i>	<i>utz'ihb'-n-aj-al</i>
paint/write-PASS-THEM	3SE-paint/write-PASS-THEM-NOM
'be painted/written'	'his/its painting/writing', 'the painting/writing of'

Here the form *tz'i[h]b'najal*, a verbal noun, has been derived through *-al* from the passive form. The Ch'orti' *-ar* nominalizer of a certain class of intransitives is immediately recognizable as identical with the Classic *-al* nominalizer of passives. The slight difference in shape is produced by the known and regular shift **l > r*. In the glyphic example, the derived verbal noun appears inflected for possession, as in this example from K5722, Kerr 1997, vol. 5 (Figure 7.9a):

a-AL-ya T'AB'?-yi **u-tz'i-b'i na-ja-la** **yu-k'i-b'i ti-u-lu a-po-k'o chi-hi la-ka-ma YAX-le-ke B'ALAM #-AJAW-wa**
Al[a]y t'ab'[aa]y utz'i[h]b'najal yuk'ib' ti ul A[j]pok' Chih Lakam Yax Lek B'ahlam,
... ajaw
alay t'ab'-aay-Ø u-tz'ihb'-n-aj-al y-uk'-ib' ti ul Ajpok' Chih Lakam Yax Lek
B'ahlam, ... ajaw
 here smooth?-MP-3SA 3SE-paint-PASS-THEM-NOM 3SE-drink-INS PREP atole
 Ajpok' Chih Lakam Yax Lek B'ahlam, . . . king
 'Here it got smoothed? the painting of the drinking-vessel for atole of Ajpok' Chih
 Lakam Yax Lek B'ahlam, king of . . .'¹²⁰

In this example, **u-tz'i-b'i na-ja-la**, *utz'i[h]b'najal* is part of the long, nominal subject of the verb *t'ab'aay*.

In many cases, following the tendency to underspell final /l/'s in the script (Zender 1999), **u-tz'i-b'i-na-ja-la**, *utz'i[h]b'najal*, is abbreviated as **u-tz'i-b'i-na-ja**, *utz'i[h]b'naja[l]*,¹²¹ as on K2358 (Figure 7.9b):

a-AL-ya T1014-yi u-tz'i-b'i na-ja yu-k'i-b'i
Al[a]y T1014[VV]y utz'i[h]b'naja[l] yuk'ib'
alay T1014-VVy-Ø u-tz'ihb'-n-aj-al y-uk'-ib'

120. The reading T'AB' for T843 has been suggested by E. Wagner and N. Grube (in Schele and Grube 1994), and D. Stuart (1998). The sequence **a-po-k'o chi-hi**, here transliterated as *A[j]pok' Chih*, could also be transliterated as *A[j]pok'o[l] Chih* or *A[j]pok'oo[l] Chih*, probably meaning 'Seated Deer'.

121. It was B. MacLeod who first suggested that **u-tz'i-b'i-na-ja** forms might be abbreviations of **u-tz'i-b'i-na-ja-la**.

here T1014-MP-3SA 3SE-paint-PASS-THEM-NOM 3SE-drink-INS
 ‘Here it got T1014ed the painting of the drinking vessel of . . .’

Stephen Houston (personal communication, 1996–1997), has pointed out to me the presence of some examples on pottery texts in which a **u** sign is placed in between **tz’i-b’i** and **na-ja**, as on K532, and where a **-Vl** suffix spelled by a **li** sign follows **tz’ihb’** before the **-n-aj** compound, as on K3026.¹²² Although these examples would challenge the proposal of a passive analysis of **tz’i-b’i-na-ja** in pottery examples as **tz’i[h]b’naj**, **tz’ihb’n-aj**, I maintain my proposal for further discussion since the **-n-aj** derivation is motivated both morphologically and syntactically whenever it is attested. Syntactically **tz’ihb’naj**, **b’aak-naj**, and **uCVlnaj** are clearly verbal and all three surely derived from non-CVC transitives (**tz’ihb’a** ‘to paint, write’ is derived from **tz’ihb’** ‘painting, writing’ and **b’aak-#** ‘to capture’ from **b’aak** ‘captive’; **uCVl** ‘to carve’ is of unknown derivation but clearly exhibits a non-CVC shape). Although I do not have an explanation for the sequence **u-tz’i-b’i u-na-ja** found on K532 besides suggesting that it is a scribal error,¹²³ for the sequences **u-tz’i-b’a-li-NAH-ja-la** and **u-tz’i-b’a-li-na-ja** there is actually an explanation. The forms may represent another type of derivation of a non-CVC transitive through **-n-aj**. In this case, however, the stem from which the verb was derived is not **tz’ihb’a** but **tz’ihb’aal**-. Classic **tz’i-b’a-li tz’i[h]b’aal** substitutes syntactically with **tz’i-b’i-na-ja-la tz’i[h]b’najal** in nominal possessed constructions that refer to the ‘painting of the vessel’, forming part of the subject of the preceding verb. Both **tz’ihb’aal** and **tz’ihb’najal** are nouns ultimately derived from **tz’ihb’** ‘writing, painting’ or its derived verbal form **tz’ihb’a**. In the case of **tz’ihb’najal**, as we have seen before, the nominalization is made from the passive of the verb **tz’ihb’a** ‘to paint, write’ in a way that parallels modern Ch’orti’ **tz’ijb’na’r** ‘writing, painting.’ Classic **tz’i-b’a-li tz’i[h]b’aal** is a noun derived through an **-aal** suffix from **tz’ihb’** ‘painting, writing.’ This Classic **-aal** suffix is attested in the hieroglyphic script as a suffix that derives nouns from other nouns, implying subtle changes in their meanings, and which is related to modern **-al** and **-ar** suffixes found in Ch’olan languages, as in Ch’orti’ **ixkar** ‘wife’ from **ixik** ‘woman’ and **ik’ar** ‘wind, breeze’ from **ik’** ‘air’ (cf. Lacadena and Wichmann n.d.). Classic **tz’i-b’a-li tz’i[h]b’aal** has cognates or descendants in modern Ch’olan languages that are derived in the same way: **tz’ijbal** in Ch’ol, and **tz’ijb’ar** in Ch’orti’. Both are composed of the root **tz’ihb’** ‘painting, writing’ and an **-all-ar** suffix. Derived from **tz’ijb’** ‘painting, writing’, Ch’ol **tz’ijbal** and Ch’orti’ **tz’ijb’ar** have the related meanings of ‘drawing’, ‘color’, and ‘decoration’: CHL **ts’ihbal** ‘dibujo’, ‘color’ (Aulie and Aulie 1978: 122); CHR **tz’ijb’ar** ‘color’ (Pérez Martínez et al. 1996: 230), **tz’ihbar** ‘a writing, a drawing or decoration’ (Wisdom 1950a: 206). ‘Drawing’, ‘color’ and ‘decoration’ are meanings that fit well the context in which **tz’i-b’a-li tz’i[h]b’aal** appears (i.e., that of painted

122. Based on these same examples first noticed by Houston, Mora-Marín (1998) rejects the analysis of **na-ja** as spelling the passive **-n-aj** in ceramic texts, an interpretation recently followed by Boot (n.d.). For these scholars, the **na-ja** and **na-ja-la** sequences following **tz’i-b’i** would not be involved in the spelling of the passive **tz’i[h]b’naj** ‘was painted’ and the possessed nominalized form **utz’i[h]b’najal** ‘the painting of’, but would instead spell a separate lexical element.

123. The Primary Standard Sequence corpus presents some other examples of scribal errors, where words are repeated or known sequences of signs have been inverted.



Figure 7.10. **u-tz'i-b'a-li**, *utz'i[h]b'aal* 'its drawing/decoration, the drawing/decoration of', on K5022 (Kerr 1997, vol. 5, p. 736).

pottery). Thus, the attested glyphic form **u-tz'i-b'a-li yu-k'i-b'i**, *utz'i[h]b'aal yuk'ib'* 'the drawing/decoration of the drinking-vessel of'—as on K5022, Kerr 1997, vol. 5 (Figure 7.10):

a-#-ya T'AB'?-yi u-tz'i-b'a-li yu-k'i-b'i
 al[a]y t'ab'[aa]y utz'i[h]b'aal yuk'ib'
 alay t'ab'-aay-Ø u-tz'ihb'-aal y-uk'-ib'
 here smooth?-MP-3SA 3SE-painting-DER 3SE-drink-INS
 'here it got smoothed the drawing/decoration of the drinking-vessel of . . .'

corresponds closely to similar expressions found in modern Ch'olan languages, as in Ch'orti'

tz'ihbar e ch'euhuy
 'decoration on a bowl' (Wisdom 1950a: 206).¹²⁴

The long /aa/ in the *-aal* Classic suffix suggested by the disharmonic spelling **tz'i-b'a-li** *tz'i[h]b'aal* may be justified linguistically, considering that the cognate form in Ch'ol is *tz'ijbal*, not *tz'ijbäl*. Since Western Ch'olan shifted *aa > a and *a > ä (Kaufman and Norman 1984), the form *tz'ijbal* in Ch'ol would appear to come from an earlier **tz'ihb'aal*, which is precisely the form attested in the glyphic texts (Lacadena and Wichmann n.d.).

Thus, provided that the transliteration of **tz'i-b'a-li** as *tz'i[h]b'aal* 'color, drawing, decoration' is correct, *tz'i[h]b'aal-n-aj* would be the passive derivation of a hypothetical, derived transitive verb *tz'ihb'aal-#* 'to draw, color, decorate', which would also belong to the non-CVC transitive class and therefore would be passivized through *-n-aj*.¹²⁵ The forms attested glyphically **u-tz'i-b'a-li-NAH-ja-la**, *utz'i[h]b'aalnajal*, on K6294 (Kerr 1989–2000), and **u-tz'i-b'a-li-na-ja**, *utz'i[h]b'aalnaja[l]*, on K3026 (Kerr 1989–2000), would be examples of nominalization by *-al* of the passive form *tz'ihb'aalnaj* 'be drawn/decorated' in the same way as **u-tz'i-b'i-na-ja-la**, *utz'i[h]b'najal*, is the nominalization of the passive **tz'i-b'i-na-ja**, *tz'i[h]b'naj* 'be painted/written.' Thus, on K6294 (Figure 7.11), we have:

124. In the Ch'orti' example I cite Brian Stross's transcription of Wisdom's original /c'ihp'ar 'e ch'euj^{ti}/i/. Wisdom has *ch'euj^{ti}* as 'bowl'. Pérez Martínez et al. (1996: 55) provide the entry *ch'e'w* 'plato, escudilla, trastos'.

125. Although the derived active transitive form is not attested, there is evidence from Ch'orti' that allows us to consider that verbal forms can be further derived from the noun *tz'ihb'aal*. For example, in Ch'orti' sources, it is attested the verb *tz'ijb'ari* 'colorear'/'to color' and 'lucir'/'to shine, look nice' (Pérez Martínez et al. 1996: 230)—analyzable as *tz'ihb'-ar-i*—derived through a *-i* verbalizer (intransitivizer) suffix (cf. Lacadena, in press).



Figure 7.11. **u-tz'i-b'a-li-NAH-ja-la**, *utz'i[h]b'aalnajal*, on K6294 (Kerr 2000, vol. 6, p. 957).

a-#-ya T'AB'? u-tz'i-b'a-li NAH-ja-la yu-k'i-b'i ti-IX TE'-le ka-wa
 a...y t'ab'[aay?] utz'i[h]b'aalnajal yuk'ib' ti ixte'[e]l kaw
 a...y t'ab'-aay-Ø u-tz'ihb'-aal-n-aj-al y-uk'-ib' ixte'el kaw
 ... smooth-MP-3SA 3SE-paint-DER-PASS-THEM-NOM 3SE-drink-INS PREP ixte'el
 cacao
 '... it got smoothed the drawing/decoration of the drinking vessel for *ixte'el* cacao'¹²⁶

In the Primary Standard Sequence there is a semantic difference between *tz'ihb'najal* 'painting/writing'—the verbal noun derived from the passive of *tz'ihb'-a* 'to paint/write', in turn derived from *tz'ihb'* 'painting/writing'—and *tz'ihb'aalnajal* 'drawing/decoration'—the verbal noun derived from the passive of a verb *tz'ihb'aal-*, itself derived from *tz'ihb'aal* 'drawing, decoration.'

A Summary of Classic Passive Derivation

Summarizing what has been covered in the previous sections, passive derivation in the glyphic texts is made in the following way:

(a) Passives of CVC root transitive verbs are derived by infixing an *-h-* passive morpheme into the verb root after the root vowel. Because of the spelling conventions of the Maya hieroglyphic script, this infixed preconsonantal *-h-* was not written glyphically, and has to be reconstructed in the transliteration as *[h]*. The resultant passive form is suffixed by the *-aj* thematic suffix, marking it as a derived intransitive. The subject of the passive verb—the former object of the active construction—is indicated by suffixed absolutive pronouns:

126. In the text I have not analyzed and translated *ixte'el*, which is probably a kind of cacao, perhaps a wild one. It is analyzable as *ix-te'-el*, where *ix-* is the well-attested *ix-/x-* prefix very common in names of plants, *te'* means 'tree', and *-el* is an abstractive suffix. García (1994) related *ixte'el* to 'sweet', according to the meaning that such an expression had in a Chontal text collected by Blom and La Farge. Perhaps Classic IX-TE'-le ka-wa *ixte'[e]l kaw* and its variant IX-TE'-le ka-ka-wa *ixte'[e]l kakaw* is related to Chontal *te'el cäcäw* 'gogo', 'guoguo'. (Keller and Luciano 1997: 235). Interestingly, the authors state: "El gogo es una clase de árbol que crece en la montaña; da fruto redondo como si fuera verdadero cacao. La semilla es dulce y se chupa, pero no sirve para otra cosa" (Keller and Luciano 1997: 235) ["Gogo is a kind of tree that grows in the mountain; it gives round fruits as if it were true cacao. The seed is sweet and can be sucked, but it does not serve for anything else."] *Ixte'el kakaw* (or *kaw*, as it appears on K6294, Kerr 2000, vol. 6, p. 957), if not naming a wild kind of cacao, may thus refer to drinks that have been made sweet by the fruit of the gogo tree.

Active	Passive
ERG-CVC- <i>V₁'w</i> -ABS	CV- <i>h</i> -C- <i>aj</i> -ABS</>

Using the example of *chuk* ‘to capture, seize’ we get:

u-chu-ku-wa	chu-ka-ja
<i>uchuku'w</i>	<i>chu[h]kaj</i>
<i>u-chuk-u'w-Ø</i>	<i>chu-h-k-aj-Ø</i>
3SE-seize-ACT-3SA	seize-[PASS]-THEM-3SA
‘he captures/captured him’	‘he was captured’

(b) Passives of non-CVC root transitives are derived suffixing a *-n* passive morpheme to the verbal stem. The resultant passive form is suffixed by the *-aj* thematic suffix, marking it as a derived intransitive. The passive subject—the former active object—is indicated by suffixed absolutive pronouns:

Active	Passive
ERG-nonCVC-ABS	nonCVC- <i>n-aj</i> -ABS

With *tz'ihb'a* ‘to paint, write’ the derivation is:

u-tz'i-b'a	tz'i-b'i-na-ja
<i>utz'i[h]b'a</i>	<i>tz'i[h]b'naj</i>
<i>u-tz'ihb'-a-Ø</i>	<i>tz'ihb'-n-aj-Ø</i>
3SE-painting-TRANS-3SA	paint-PASS-THEM-3SA
‘he paints/painted it’	‘it was painted’

The nominalization of passive forms of non-CVC root transitives in *-n-aj* is made by suffixing *-al* to the *-aj* thematic suffix. This derived noun may be inflected for possession:

Passive	Nominalization
nonCVC- <i>n-aj</i> -ABS	(ERG)-nonCVC- <i>n-aj-al</i>
tz'i-b'i-na-ja	u-tz'i-b'i-na-ja-la
<i>tz'i[h]b'naj</i>	<i>utz'i[h]b'najal</i>
<i>tz'ihb'-n-aj-Ø</i>	<i>u-tz'ihb'-n-aj-al</i>
paint/write-PASS-THEM-3SA	3SE-paint/write-PASS-THEM-NOM
‘it was painted’	‘its painting/writing’, ‘the painting /writing of’

Concluding remarks

It is noticeable that the common passive derivation found in the Classic hieroglyphic record corresponds exactly to the passive derivation system found in Eastern Ch'olan as we know it from Morán's grammar of seventeenth-century Ch'olti and from modern Ch'orti'. If we also consider the *-w-aj* passive derivation (Lacadena 1997b; Lacadena and Wichmann 2002) and place Ch'olti and Ch'orti' at successive points in a shared historical line (Robertson 1992; 1998) we get:

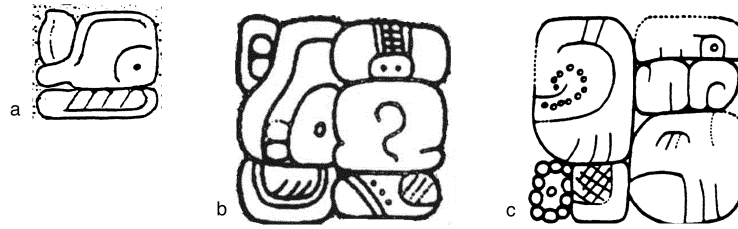


Figure 7.12. CV-Ca spellings of passives of CVC transitive verbs. (a) **chu-ka** on Chinaja' Panel I, A3 (after Dillon 1978). (b) **chu-ka** on Yaxchilan Lintel 16, A2 (after Graham 1977: 41). (c) **jo-ch'a** on Itzan Stela 17, K2 (drawing by A. Lacadena).

Passive	CLASSIC		17th-C. Ch'olti		CH'ORTI'
CVC	CV- <i>h</i> -C- <i>aj</i>	>	CV-[<i>h</i>]-C- <i>a(h)</i>	>	CV- <i>j</i> -C- <i>a</i>
nonCVC	nonCVC- <i>n-aj</i>	>	nonCVC- <i>n-a(h)</i>	>	nonCVC- <i>n-a</i>
	nonCVC- <i>w-aj</i>	>	(not attested)	>	nonCVC- <i>w-a</i>

As can be seen, the *-h-*, *-n* and *-w* passive morphemes have remained unchanged through time. The main changes affected the phonological shape of the Classic *-aj* thematic, which ends up losing its final /j/.

Interestingly, perhaps, by Late Classic times, we apparently find the beginning of the process by which *-aj* loses its final /j/. Some rare late examples of passive forms are written as CV-Ca, not as CV-Ca-ja. At Chinaja' (Figure 7.12a), instead of the more common **chu-ka-ja** *chu[h]kaj* 'was captured', we find **chu-ka**, which could be transliterated *chu[h]ka*. It is true that such a spelling may be considered ambiguous since it could be just another example of underspelling in the script, in which case **chu-ka** would have to be transliterated not as *chu[h]ka* but as *chu[h]ka[j]*. In fact, on Yaxchilan Lintel 16 the same spelling **chu-ka** is present (Figure 7.12b). But, while in the Yaxchilan example the underspelling of *-ja* is probably motivated by the graphic composition, which extends to two blocks, in the Chinaja' text **chu-ka** is written in a single block. We may assume that the Maya scribe who designed the Chinaja' text did not have problems of space, as the scribe from Yaxchilan might have had. Yaxchilan **chu-ka** and Chinaja' **chu-ka** could thus be interpreted in different ways, the Yaxchilan example being one of underspelling (**chu-ka**, *chu[h]ka[j]*) and the Chinaja' example possibly representing **chu-ka** *chu[h]ka* showing the loss of the final /j/ of the *-aj* suffix. The Chinaja' example is not isolated. At Itzan, another late spelling lacks the final *-ja* sign in passive context (Figure 7.12c): **jo-ch'a** *jo[h]ch'a* instead of **jo-ch'a-ja** *jo[h]ch'aj*. Again, this example could be interpreted as an abbreviation of the expected *jo[h]ch'a[j]* 'be drilled', since **jo-ch'a** at Itzan, like **chu-ka** on Yaxchilan Lintel 16, is written in a double block. However, I think it would be interesting to explore the possibility that **chu-ka** at Chinaja' and **jo-ch'a** at Itzan might actually correspond to *chu[h]ka* and *jo[h]ch'a*, forms that would show the beginning of the loss of final /j/ in the *-aj* suffix, in an Eastern Ch'olan vernacular context; both Chinaja' and Itzan belong to the region suggested to have been an Eastern Ch'olan vernacular area in Classic times (Lacadena and Wichmann 2002). An attestation of a possible *-aj* > *-a(j)* evolution of the *-aj* thematic suffix by the Late Classic should be looked upon in relation to other more or less contemporaneous changes, such as the loss of vowel length *VV* > *V* (Houston, Stuart, and

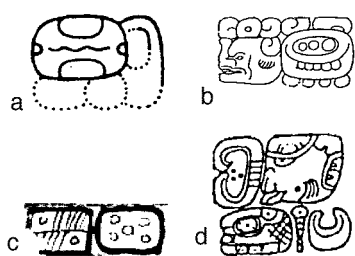


Figure 7.13. Other passive derivations attested in the script. Eastern Ch'olan *-w-aj* passive: (a) **B'AK-wa-ja**, *b'aakwaj* 'he was captured', on Tikal Rock Sculpture, A3 (after Martin 1995: fig. 8); (b) **yu-BAT-lu-wa-ja-la**, *yuCVlwajal* 'its carving, the carving of', on Copan Altar Z, C1 (drawing by L. Schele). Yucatecan *-(a)b* passive: (c) **tz'a?-b'i** *tz'ab'i* 'it was given' on Madrid p. 52c (after Villacorta and Villacorta 1977); (d) **jo-ch'o-b'i-ya**, *joch'b'iyy* 'it was drilled', on Chichen Itza Casa Colorada Frieze (drawing by L. Schele)

Robertson, this volume) and the merging of /j/ and /h/ into a single undifferentiated phoneme (Houston, Stuart, and Robertson, this volume; Grube, this volume).

The placement of the most common paradigm of passive derivation in the glyphic texts within an Eastern Ch'olan tradition is of major importance for the linguistic affiliation of glyphic texts. Most of the identified morphological elements of the glyphic grammar may be regarded as ambiguous in terms of linguistic affiliation because they either may be related to more than one Ch'olan subgroup or seen as representing archaic stages of the history of the Ch'olan or even the Greater Tzeltalan group. It is therefore precisely the passive derivation described here, along with the *-VV,y* mediopassive derivation (as described historically by Houston et al. 2000), which allows us to consider that the glyphic grammar—generally speaking—represents an Eastern Ch'olan language.¹²⁷

The suggested passive derivation of CVC root transitives as *CV-h-C-aj* and non-CVC transitives as *nonCVC-n-aj* is the common paradigm of passive derivation in the script. Examples of this passive paradigm are found throughout the Maya lowlands, which suggests a strong linguistic uniformity in the grammar of the script. However, *CV-h-C-aj* and *nonCVC-n-aj* are not the only passive forms that are found in the Maya hieroglyphic corpus. At least two other passive morphemes, *-w-aj* and *-(a)b'*, are present in the script. Although *-w-aj*—attested in forms such as **B'AK-wa-ja**, *b'aakwaj* 'was captured' and **yu-BAT-lu-wa-ja-la**, *yuCVlwajal* 'its carving', 'the carving of' (Figure 7.13a–b)—also belongs to Eastern Ch'olan, its geographic distribution (its presently known attestations are at Copan and Tikal) suggests that its use was dialectal, belonging to the Eastern Ch'olan vernacular region (Lacadena 1997b; Lacadena and Wichmann 2002). Of special interest is the *-(a)b'* passive—probably attested in forms such as **tz'a?-b'i**, *tz'ab'i* 'was given' and **jo-ch'o-b'i-ya**, *joch'b'iyy* 'was drilled' (Figure 7.13c–d)—since this passive derivation, which appears in the Madrid Codex (Lacadena 1997a; see also Vail 2000b) and at Chichen Itza (Lacadena and Wichmann 2002) would be related to the Yucatecan group.

Acknowledgments

I am indebted to many people for their comments and criticisms. The list is long, since the original ideas were first written up and circulated several years ago, in the beginning of 1996. One year later, in 1997, an improved version of the manuscript was circulated, and

127. The active and antipassive voices, for example, are best understood as representing archaic forms predating proto-Ch'olan and even Greater Tzeltalan.

in the following years discussions have continued to take place. I would like to mention many friends and colleagues, including the late Linda Schele, Victoria Bricker, Stephen Houston, John Justeson, Terrence Kaufman, Barbara MacLeod, John Robertson, David Stuart, Robert Wald, Søren Wichmann, and Marc Zender in grateful acknowledgement of their useful comments and the pieces of data that have been brought to my attention.

EIGHT

On the Morphology of Intimate Possession in Mayan Languages and Classic Mayan Glyphic Nouns

MARC ZENDER

Department of Archaeology, University of Calgary

Introduction

Glyphic nouns and glyphic nominal morphology are becoming increasingly well known to students of Classic Maya hieroglyphic texts (ca. A.D. 250–900). In the wake of some four decades of intensive decipherment, the major classes of nouns have been identified (Bricker 1986: 38–39, 92–120; Macri 1997), their possessional morphology has been outlined (Stuart 1987: 25–28, 36), and glyphic processes of qualitative and quantitative abstraction have been convincingly related to comparative evidence from Mayan languages (Houston et al. 2001). Recently, Houston, Robertson, and Stuart (Houston and Stuart 1998: 76; Houston et al. 2001: 42–46) have identified a new class of absolutive suffixes on unpossessed noun stems referencing items of personal property, and this discovery has made possible a fresh engagement with the semantics of Classic Mayan nominal morphology and emic concepts of intimate possession.

The purpose of this paper is to broaden and deepen the appreciation of glyphic nouns by focusing on an important subset of these elements, namely, those nouns that exhibit absolutive suffixes in their unpossessed forms and reference the grammatical and semantic category of intimate possession. I contend there is ample morphological evidence for this category in the inscriptions, including three suffixes (*-aj*, *-is*, and *-Ø*) that mark the unpossessed, absolute noun stems of items of personal property, body parts, and kin, respectively. Discussion proceeds from the isolation of absolutive patterns in modern Mayan languages and their reconstructed ancestors to the documentation of similar patterns in the hieroglyphic script. Implications for the diachronic development of the category of intimate possession in Mayan languages are taken up in the discussion and conclusions.

A word about method: As might be expected, this study makes ample usage of historical and comparative studies of Mayan languages to document the forms attested in glyphic texts. Such studies are the source of important, independent predictions about ancient language at varying time depths; predictions that can be tested against patterns of sign usage and combination in the script itself. However, I must insist—for a number of reasons—on the foundational priority of the contemporary hieroglyphic evidence. All too

often have preconceptions about the linguistic identity of the script been mapped haphazardly onto patterns detected in it, each producing a number of implausible and unsupportable interpretations in their wake (e.g., Thompson 1960; Closs 1987). Similarly, preconceptions about the tools available to the Maya script and the rules governing their use have led to highly particularistic and alphabetic analyses on the one hand (Whorf 1933, 1942) and highly generalized and ideographic analyses on the other (Thompson 1960; Barthel 1957, 1977; Marcus 1992). Caution: a chief regard for probative contexts and attention to such “complete” phonetic spellings of lexemes as occur in the hieroglyphic script must guide us as we relate comparative linguistic evidence to glyphic variation. Epigraphic and linguistic evidence must be employed to complement one another; neither should come to dominate the other.

Linguistic Evidence

A remarkable feature of Mesoamerican languages in general, and of Mayan languages in particular, is the large number of noun stems that almost always occur in the possessed state. Stems singled out for such treatment usually include body parts, kinship terms, and certain types of culturally loaded personal property—such as clothing, jewelry and heirlooms, ethnic foods, and habitation (Andrews 1975: 149–55; Houston et al. 2001). The item referenced by such a stem is considered intimately associated with a human possessor within a certain cultural framework and therefore cannot as a rule be mentioned, even in a general way, without some explicit acknowledgment of that association (England 1983: 66–70; Campbell et al. 1986: 549). Mayan languages make this acknowledgment in a number of ways, none of them necessarily mutually exclusive. Some languages, such as modern Chontal (Knowles 1984: 194–205), never allow the affected stems to occur in unpossessed form. Other languages require special morphological marking of the stem with an “absolute” suffix when not explicitly possessed, as in Ch’ol (Warkentin and Scott 1980: 15; Bricker 1986: 40). Most languages comfortably accommodate both patterns, however, as is the case in Mam (England 1983), Poqomam (Santos Nicolas et al. 1997: 69–70), and Tojolab’al (Furbee-Losee 1976a: 72–76) among numerous others. These structurally diverse approaches to a single, underlying linguistic feature should alert the historical linguist to the antiquity of the feature under discussion.

Although this feature is often referred to in the literature as “inalienable possession,” the moniker is not really semantically appropriate, for it misses the inherent, intimate relationship between culturally loaded items like food and clothing and the network of kinship ties upon which society depends, privileging instead the obviously inalienable relationship between body parts and their hosts. This is surely a false dichotomy. A basic, underlying unity between these seemingly diverse categories is strongly indicated by the identical structures of these categories within the pertinent languages. Moreover, inalienable relationships do occur between nouns in Mayan languages, but in a manner distinct from that under investigation here. Thus I follow Campbell et al. (1986: 549) in adopting the term “intimate possession” for the category under investigation instead.

Intimate possession is perhaps best exemplified in two Lowland Mayan languages: Tojolab’al (a member of the Tzeltalan subgroup [Robertson 1977]) and Ch’ol (a member of the Ch’olan subgroup), where nearly all body parts, personal property, and kinship terms

bear an absolutive suffix (-ABS) whenever they take no other affixation. When possessed, the absolutive marker becomes redundant—that is, the previously occulted, intimate relationship has now become explicit—and the marker is therefore dropped:

- (1) Toj. *ok-al* ‘foot-ABS’ (Furbee-Losee 1976a: 75)¹²⁸
k-ok ‘my-foot’
- (2) Toj. *lu’mil-al* ‘property-ABS’ (Furbee-Losee 1976a: 75)
s-lu’mil ‘his-property’
- (3) Toj. *b’ankil-al* ‘older.brother-ABS’ (Furbee-Losee 1976a: 75)
b-b’ankil ‘my-older.brother’
- (4) Ch’ol *ok-äl* ‘foot-ABS’ (Attinasi 1973: 300)
iy-ok ‘his-foot’
- (5) Ch’ol *b’ujk-äl* ‘garment-ABS’ (Beekman and Beekman 1953: 36)
i-b’ujk ‘his-garment’
- (6) Ch’ol *chich-äl* ‘older.sister-ABS’ (Warkentin and Scott 1980: 15, 21)
i-chich ‘his-older.sister’

In Tojolab’al and Ch’ol, all intimately possessed items are marked in their unpossessed forms with *-al* and *-äl*, respectively. No distinction is made between any of the subcategories of intimate possession, at least not on the formal level. By contrast, most other Mayan languages do distinguish (to varying degrees) between body parts, personal property, and kinship terms, and this is done through the use of formally distinct, absolutive suffixes. This is clearest in Kaqchikel and Poqomam, two Highland Mayan languages of the K’iche’an subgroup that preserve a large number of proto-Mayan contrasts:

- (7) Kaq. *q’ab’-aj* ‘hand-ABS’ (Cojti Macario et al. 1998: 255)
nu-q’a ‘my-hand’
- (8) Kaq. *wex-aj* ‘trousers-ABS’ (García Matzar et al. 1999: 54)
nu-wex ‘my-trousers’
- (9) Kaq. *alib’-ätz* ‘daughter.in.law-ABS’ (Cojti Macario et al. 1998: 13)
w-ali ‘my-daughter.in.law’
- (10) Poq. *oq-is* ‘foot-ABS’ (Santos Nicolas et al. 1997: 69)
r-ooq ‘his-foot’
- (11) Poq. *we’ek-Ø* ‘tortilla-ABS’ (Santos Nicolas et al. 1997: 178)
nu-we’ek ‘my-tortilla’
- (12) Poq. *tat-b’ees* ‘father-ABS’ (Santos Nicolas et al. 1997: 69)
ni-taat ‘my-father’

Where unpossessed body parts in Kaqchikel and Poqomam take the absolutive suffixes *-aj* and *-is*, respectively, kinship terms are treated differently and take either *-ätz* and *-laxel* in Kaqchikel or *-b’ees* in Poqomam. Unpossessed items of personal property are also marked with the absolutive, though in a slightly less straightforward manner; where Kaqchikel marks these with *-aj*, treating them formally like body parts and setting both of

128. All Mayan linguistic forms are here cited in a practical, phonemic orthography based on the conventions of the Academy of Mayan Languages of Guatemala (ALMG) (López Raquéc 1989).

them apart from kinship terms, Poqomam marks them with $-\emptyset$, which likewise functions to set them apart from both body parts and kinship terms.

In fact, most other Mayan languages fit into one of the two groups exemplified by Kaqchikel and Poqomam. In the first group are Tzeltal (Slocum and Gerdel 1965), Q'anjob'al (Diego Antonio et al. 1996: 241), Mam (England 1983: 68–69), Ixil (Poma S. et al. 1996: 62–66), Awakatek (T. Larsen 1976), and K'iche' (Campbell et al. 1986: 549; Antonio Lopez and Sis Iboy 1998: 57–59), which all distinguish between at least two subcategories of intimate possession. These languages vary only in that some group kinship and body parts together as distinct from personal property, whereas others group body parts and items of personal property together. The second group includes Tzotzil (Sarles 1966: 65–68; Haviland 1988: 97–101), Sakapultek (Du Bois 1981: 181–89), Q'eqchi' (Alberto Tzul and Tzimaj Cacao 1997), Tz'utujil (Dayley 1985: 144), Poqomchi' (Brown 1978: 51–58) and, as we have seen, Poqomam. These languages all distinguish between body parts, personal property, and kinship terminology through the use of distinctive absolutive suffixes.

While it is evident that not all modern Mayan languages distinguish the various categories of intimately possessed items from one another, we have seen that this feature appears in numerous daughter languages of the Tzeltalan, Q'anjob'alan, Mamean, and K'iche'an subgroups. This strongly argues for its presence in proto-Mayan, since it is quite unlikely that all of these languages innovated this feature independently. Rather, those languages without this feature must have inherited the feature but then lost it at some point after the breakup of proto-Mayan.

This consideration is borne out in two important ways. First, even those languages without this distinction bear evidence of earlier, more complete systems of intimate possession. Modern Ch'ol, for instance, still preserves vestiges of distinct $-il$ and $-äl$ absolutive suffixes:

- (13) Ch'ol *k'äb'-äl* 'hand-ABS' (Aulie and Aulie 1978: 44)
i-k'äb' 'his-hand'
- (14) Ch'ol *píxol-äl* 'hat-ABS' (Warkentin and Scott 1980: 15, 21)
i-píxol 'his-hat'
- (15) Ch'ol *íjtz'in-il* 'younger.sibling-ABS' (Beekman and Beekman 1953: 14)
iy-íjtz'in 'his-younger.sibling'

However, as Bricker (1986: 40; see also Warkentin and Scott 1980: 15) notes, this feature is rapidly being lost. A large number of Ch'ol body part terms—such as *ok* 'foot', *ni* 'nose', and *jol* 'head'—no longer have absolute stems, and therefore cannot occur in unpossessed form (Aulie and Aulie 1978: 67, 84, 89; cf. Beekman and Beekman 1953: 43, 53, 55). A similar process has already run its course in modern Chontal (where * marks impossible forms):

- (16) Chon. **ok* 'foot' (Knowles 1984: 196)
uy-ok 'his-foot'
- (17) Chon. *otot* 'house' (Knowles 1984: 197)
k-otot 'my-house'
- (18) Chon. **na* 'mother' (Knowles 1984: 196)
a-na 'your-mother'

All body parts and kinship terms in modern Chontal are obligatorily possessed, and therefore cannot appear without ergative prefixes (Knowles 1984: 195–96). Items of personal property like ‘house’, however, have simply lost all traces of the pattern of intimate possession—that is, in the absence of any other surviving absolutive suffixes, it would be incorrect to posit a $-\emptyset$ allomorph on unpossessed nouns like ‘house’. That this is a recent development is clear from Acalan Chontal, the direct ancestor of modern Chontal, which had a robust set of absolutive suffixes in $-al$, $-il$, and $-\emptyset$ (Bricker 1986: 44). Clearly, then, both Ch’ol and Chontal present substantial internal and external evidence of only recently having lost the feature of intimate possession.

The antiquity of intimate possession is also evidenced in an important paper by Houston et al. (2001: 42–46), who note that data from the Q’anjob’alan (Houston et al. 2001: 36), Mamean (Du Bois 1981: 181–89), and K’iche’an (Cojti Macario et al. 1998: 255) branches compel the reconstruction of a proto-Mayan $*-Vj \sim *-aj$ absolutive suffix. They go on to observe that “there is a tendency for $-Vj$ to suffix words referring to clothing and body parts, but for there to be distinct terms for kinship” (Cojti Macario et al. 1998: 35). Finally, they suggest the reconstruction of $*-b’$ - and $*-tz$ - as proto-Mayan absolutive markers for unpossessed kinship terms. Thus, there is compelling formal and structural evidence in nearly all surviving daughter languages for a proto-Mayan distinction between at least two subcategories of intimately possessed items. Moreover, there is also substantial evidence that proto-Mayan distinguished between all three subcategories of intimately possessed nouns since, as we have seen, this feature has been conserved in the Tzeltalan, Mamean, and K’iche’an subgroups, which are widely regarded to have had little in the way of direct contact since the breakup of proto-Mayan (Kaufman 1973). Lest this evidence not seem compelling enough, however, it should be pointed out that an ancestral form of Eastern Ch’olan is implicated as well. As I demonstrate below, the hieroglyphic script also seems to have distinguished between at least three subcategories of intimate possession.

Hieroglyphic Evidence

Morphological evidence for intimate possession in the Maya hieroglyphic script spans three suffixes ($-aj$, $-is$, and $-\emptyset$) that serve to distinguish the unpossessed, absolute noun stems of items of personal property, body parts, and kin, respectively. Each is considered in turn, along with the evidence for its inclusion in the discussion.

The -aj Absolutive Suffix of Items of Personal Property

The absolutive $-aj$ was first discovered in the inscriptions by Stephen Houston, John Robertson, and David Stuart, and convincingly explained by them as a retention of the proto-Mayan $*-aj$ absolutive (Houston and Stuart 1998: 76; Stuart et al. 1999b: 65, 1999a: 13–14; Houston et al. 2001). The suffix is invariably written with T181 **ja** and appears on several unpossessed items of personal property (Figure 8.1), including *b’aa**h**-aj* ‘image-ABS’ or ‘representation-ABS’ (Figure 8.1a), *u’**h**-aj* ‘collar,jewel-ABS’ (Figure 8.1b), *tu’**p**-aj* ‘earspool-ABS’ (Figure 8.1c), and *si**h**-aj* ‘gift-ABS’ (Figure 8.1d).¹²⁹ As we

129. This paper employs the system of glyphic numeration devised by J. E. S. Thompson (1962); transliteration conventions follow G. Stuart (1988b).

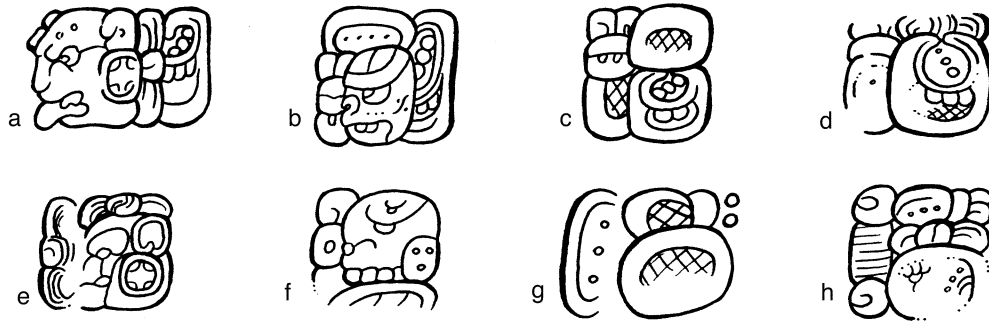


Figure 8.1. *-aj* absolutive of personal property. (a) **B'AAH-hi-ja**, *b'aah-aj* 'image-ABS', Tamarindito H.S.3, Step III: E1, after drawing by Stephen Houston. (b) **u-ha-ja**, *u'h-aj* 'collar:jewel-ABS', Palenque Temple of the Inscriptions, center tablet, B8, after drawing by Linda Schele. (c) **tu-pa-ja**, *tu'p-aj* 'earspool-ABS', Palenque Temple of the Inscriptions, center tablet, A9, after drawing by Linda Schele. (d) **si-hi-ja**, *sih-aj* 'gift-ABS', Tamarindito H.S.3, step II: E1, after drawing by Stephen Houston. (e) **U-B'AAH-hi**, *u-b'aah* 'his-image', Tikal Stela 5: D4, after Jones and Satterthwaite (1982: fig. 8a). (f) **yu-U'H-li**, *y-uhil* 'his-collar:jewel', Jade Ornament, Chichen Itza, after Stuart and Houston (1994: fig. 55a). (g) **U-tu-pa**, *u-tu'p* 'his-earspool', Jade Ornament, Chichen Itza, after Houston and Stuart (1998: fig. 2d). (h) **U-si-hi**, *u-sih* 'his-gift', Itzan Stela 17: C1, after drawing by Stephen Houston.

expect, the *-aj* suffix disappears when these items are possessed, as we find in the glyphic forms *u-b'aah* 'his-image' or 'his-representation' (Figure 8.1e), *y-u'h-il* 'his-collar:jewel' (Figure 8.1f), *u-tu'p* 'his-earspool' (Figure 8.1g) and *u-sih* 'his-gift' (Figure 8.1h). While some earlier analyses saw glyphic forms such as *tu'p-aj* ~ *u-tu'p* and/or *b'aah-aj* ~ *u-b'aah* as verbal in nature (Bricker 1986: 126–31, 136–38; Josserand et al. 1985), the first of these was long ago demonstrated to be a noun (Mathews 1979; Justeson 1983; Macri 1988: 81–82) and most epigraphers are now in agreement that these expressions are best understood in terms of nouns and nominal morphology (Houston and Stuart 1998; Mathews and Zender 1998: 85–90; though cf. Mora-Marín 2000: 19–21). Moreover, while Houston and Stuart (1998: 75, 77–79) note the occasional use of *u-b'aah* to mean 'his-head'—as in the 'tying on his-head' of a ruler's headband (*k'ahl-aj-Ø t-u-b'aah*) and in scenes of sacrifice by decapitation (*ch'ak u-b'aah*)—they present overwhelming evidence that its most common usage in the hieroglyphic script reflects the term “image” or “representation.” Thus, this term is seen to reference the depictions of kings and nobles in Maya art as “the image of” or “the representation of” the actual actor who performed the action depicted (Houston and Stuart 1998; Houston et al. 2001). Perhaps more importantly, this should also serve to clarify for us the consideration that images on classic Maya stelae were not thought of as the “self” or “embodiment” of the ruler, as has been previously suggested (Houston and Stuart 1998: 94–95); rather, they seem to have been important, culturally loaded personal possessions, in-kind to items of personal adornment and gifts. As will be seen, this is a most important observation, for it explains the suffixation of *b'aah-* throughout most of the inscriptions with *-aj*, an absolutive suffix otherwise restricted to items of personal property such as clothing, jewelry, and heirlooms.

The -is Absolutive Suffix of Body Parts

There has been some confusion in the literature regarding the proper transliteration and significance of a fairly common absolutive suffix written with T57 *si*. In one of its many

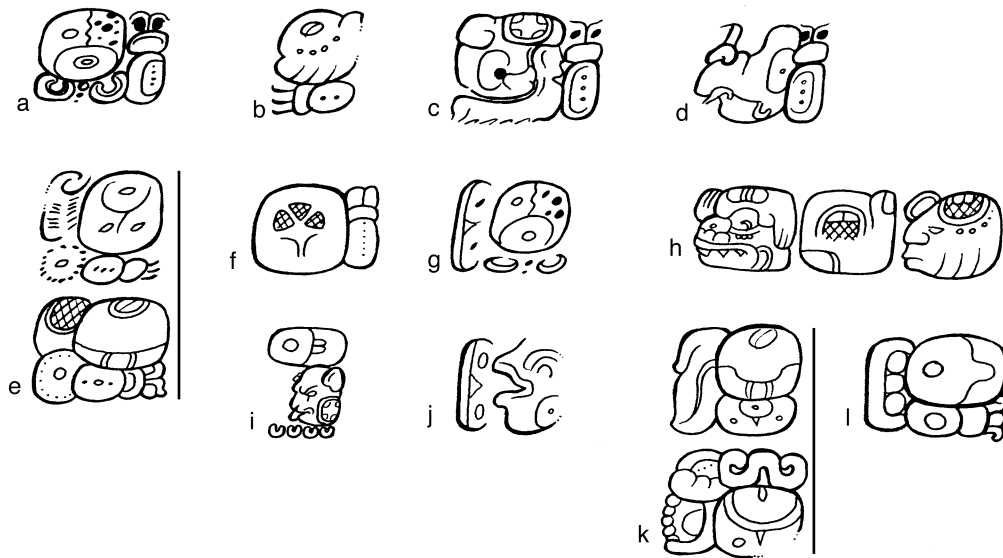


Figure 8.2. *-is* absolutive of body parts. (a) **WAY-ya-si**, *way-is* 'spirit.companion-ABS', unprovenanced vessel, after K2777 (Kerr 1989–2000). (b) **K'AB'-si**, *k'ab-is* 'hand-ABS', Tikal miscellaneous text 48, burial I 16, after drawing by Annemarie Seuffert. (c) **B'AAH-si**, *b'aah-is* 'head-ABS', unprovenanced vessel, after K1440 (Kerr 1989–2000). (d) **TI'-si**, *ti'-is* 'mouth-ABS', unprovenanced vessel, after K1440 (Kerr 1989–2000). (e) **o-la-si**, *o'hl-is* 'heart-ABS', unprovenanced shell ornament, Yale University Art Gallery, after drawing by David Stuart; ~**o-O'HL-si** *o'hl-is* 'heart-ABS', Palenque palace tablet: E14, after drawing by Linda Schele. (f) **UT'-si**, *ut-is?* 'face-ABS?', Yaxchilan H.S.3: step V, D9, after Graham (1977:171). (g) **U-WAY-ya**, *u-way* 'his-spirit.companion', unprovenanced vessel, after K0771 (Kerr 1989–2000). (h) **U-k'a-b'a**, *u-k'ab'* 'his-hand', Piedras Negras Lintel 2, S2–U1, after a drawing by David Stuart. (i) **U-B'AAH-ji**, *u-b'aah* 'his-head', Quirigua Stela E, West, after drawing by Linda Schele. (j) **U-TI'**, *u-ti'* 'his-mouth', unprovenanced jade plaque, B7, after Dütting (1987: fig. 1). (k) **yo-O'HL-la**, *y-o'hl* 'his-heart', Palenque Temple of the Inscriptions, west panel, B7, after drawing by Linda Schele; ~ **a-wo-la**, *aw-o'hl* 'your-heart', Palenque Temple XVIII stuccoes, G2, after Schele and Mathews (1979: cat. 539). (l) **u-UT-tu**, *u-ut* 'his-face', Copan Stela 11, B3, after drawing by Barbara Fash.

contexts the *si* sign suffixes various allographs for **WAY** (Figure 8.2a), a noun meaning 'companion spirit' (Houston and Stuart 1989). Grube and Schele (1994: 3) have read the collocation in these contexts as *wayas*, which they supported with reference to Yukatek *wayas* 'figure, fantasy, or illusion'. This reading—while certainly plausible for the time—is hard to relate to attested morphology in Ch'olan languages, which do not preserve any *-as* or *-Vs* nominal suffixes. Moreover, an interpretation of T57 *si* as *-as* quickly becomes unmanageable in the numerous other contexts where this suffix appears. More recently, Stuart and Houston et al. have seen the suffix as either "adjectival" in nature (Stuart et al. 1999a: 150) or as an "apparent nominalizer" (Houston et al. 2001: 23), transcribing it as *-is* in the forms **WAY-(ya)-IS**, *wayis*, and **o-la-IS**, *o'hblis*.¹³⁰

I follow this recent trend toward seeing the suffix written with T57 *si* as *-is*, and there

130. Where Houston et al. (2001) see T57 as morphosyllabic **-IS** in these contexts, I am more comfortable with the traditional reading of this sign as *si* (Justeson 1984: 320). Since obligatory vowels are clearly supplied by the reader of Maya inscriptions in such contexts as **U-CHOK-wa** > *u-chok-[o]w*, **JUB'-yi** > *jub'-[uu]y*, and **WITZ-ja** ~ *wi-tzi-ja* > *witz-iij*, it does not seem to me unreasonable to posit a similar state of affairs in such spellings as **O'HL-si** > *o'hl-[i]s*.

can be little doubt that the suffix is nominal rather than adjectival in nature. First, *way-is* and other nouns suffixed with *-is* (see Figure 8.2) are common in titular contexts throughout the inscriptions, and are thus demonstrably substantival. Second, all modifiers in Lowland Mayan languages (be they attributives, adverbs or numerals) must precede the modified term. Since *way-is* and other NOUN-*is* forms often stand alone in titular phrases and since they can occasionally occur in clause-final position, this disqualifies the *-is* suffix as an adjectivizer (Zender 1999: 22). Third, and perhaps most importantly, the pattern of their occurrences in the script strongly suggests that we are dealing with an absolutive suffix marking a distinct subcategory of intimate possession (Figure 8.2).

Since consensus has yet to be reached on the proper transcription and transliteration of some of the nouns suffixed with *-is*, I defend my interpretations of the more complex spellings in the notes, and point out some of the more telling examples. Implicated terms include *way-is* ‘companion.spirit-ABS’ (Figure 8.2a),¹³¹ *k’ab-is* ‘hand-ABS’ (Figure 8.2b),¹³² *b’aah-is* ‘head-ABS’ (Figure 8.2c), *ti-is* ‘mouth-ABS’ (Figure 8.2d),¹³³ *o’hl-is* ‘heart-ABS’, seen in at least two different spellings (Figure 8.2e),¹³⁴ and, less securely, *ut-is* ‘face-ABS’ (Figure 8.2f). As expected, the previously inexplicable *-is* suffix disappears

131. Examples of such suffixation are numerous, and include the painted texts of Kerr 2723, 2777, 4020, and 6619 as well as monumental examples on Tikal Altar 5 and the Site Q Panels (see Grube and Schele 1994). John Robertson (personal communication, 1999) notes that terms for ‘companion spirits’ are often intimately possessed in Mayan languages and that they tend to belong to the subcategory of body parts, as indeed seems to be the case here. This is perhaps clearest in Q’eqchi’ *musik’-ej* ‘spirit’, where body-parts typically take absolutive *-ej* and kinship terms take *-b’ej* (John Robertson, personal communication, 1999; Alberto Tzul and Tzimaj Cacao 1997: 55–57). Interestingly, Poqomchi’ has the form *k’uxl-is* ‘well.being-ABS’ as the absolute form of *ni-k’ux* ‘my-well.being’ (Brown 1978: 55). Emically, then, the Maya seem to have seen the soul (and spirit companions), the heart, and the emotions (like well-being) as actual body parts.

132. The context, an extended nominal phrase from Tikal MT 48, is less clear than one would like, and the example is unfortunately unique. Therefore, it would be unwise to place too much faith in this one example, interesting as it is.

133. Another example of glyphic TP-si can be found on an unprovenanced ceramic (Coe 1973: 87, at R–S).

134. Despite ample hieroglyphic examples of *o’hl-* ‘heart’, there remains substantial confusion in the literature with regard to the proper transliteration and interpretation of this sign. Briefly, while Schele’s interpretation of the sign as *ol* ‘portal’ has become entrenched in the literature (e.g. Schele and Mathews 1998: 45–46, 414), epigraphic and linguistic support for this interpretation is severely wanting. First, the proper term for ‘hole’ is not *ol* but *jol*, with an initial velar-fricative—cf. Yuk. *jool* ‘hole’ (Bastarrachea et al. 1992: 93) and K’iche’ *jul* ‘hole’ (Ajpacala Tum et al. 1996a: 105). Second, disharmonic spellings of this word as *o-la* point to a transliteration of either *o’hl* or *’o’ol*, not a word with a short vowel like that of *jol* ‘hole’. Third, a number of probative contexts have led to growing consensus amongst epigraphers that *o’hl-* ‘heart’ is the implicated root (Barbara MacLeod, personal communication, 1998; David Stuart, personal communication, 1999; Stephen Houston, personal communication, 1999). Two of the clearest contexts can be given here. First, a spoken text from Palenque’s Temple XVIII stuccos reads **ti-ma-ja a-wo-la** > *ti[h]m-aj-Ø aw-o’hl* ‘thy heart is appeased’ (Schele and Mathews 1979: cat. no. 539, spoken by sublords). A similar sentence—**ti-mi-ja a-O’HL che-he-na** > *ti[h]m-[aj]-Ø a[w]-o’hl cheben* ‘thy heart is appeased, he said’—appears in a small, spoken text on Kerr 2784 (Reents-Budet et al. 1994: 94). Other examples, using a variety of verbal and nominal morphology, proliferate on Palenque’s West Tablet of the Temple of the Inscriptions (at A7–B7, A11–B12, C3–D3, and D8; Schele and Mathews 1998: 103). Second, Nikolai Grube (personal communication, 1999) points out to me that a common title at Palenque, **a-pi-tzi-la (o)-O’HL-(la)** might be best transliterated *aj-pitz-iil o’hl* ‘he of the youthful heart’. Only ‘heart’ makes sense in any of these contexts, and linguistic data from Tzotzil *o’lol*

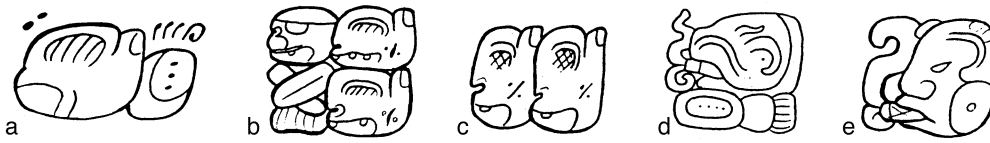


Figure 8.3. Metaphoric extension in *-is*. (a) **k'a²-si**, *k'a[h]k'-is* 'fire-ABS', Rio Azul shell plaque, after Adams (1986: 449). (b) **U-k'a-k'a**, *u-k'a[h]k'* 'his-fire', Chichen Itza, Casa Colorada hieroglyphic frieze, after drawing by Erik Boot. (c) **k'a-k'a**, *k'a[h]k'* 'fire', Chichen Itza, Temple of the Four Lintels, lintel I, after drawing by Ruth Krochok. (d) "SMOKE"?-**si**, "smoke"?-*is*, 'smoke?-ABS', Yaxchilan Lintel 47: C5, after Graham (1977, 103). (e) "SMOKE"? Coba H.S., after Robicsek (1978: 24, fig. 27).

when these nouns are possessed, as we see in the glyphic forms *'u-way* 'his-companion.spirit' (Figure 8.2g), *u-k'ab* 'his-hand' (Figure 8.2h),¹³⁵ *u-b'aah* 'his-head' (Figure 8.2i), *u-ti* 'his-mouth' (Figure 8.2j),¹³⁶ *y-o'hl* 'his-heart' ~ *aw-o'hl* 'your-heart' (Figure 8.2k), and *u-'ut* 'his-face' (Figure 8.2l).¹³⁷ Without doubt, then, *-is* functions as an absolutive suffix, and its glyphic environments seem to overwhelmingly favor the hypothesis that it marks unpossessed body parts in a manner complementary to the *-aj* of personal property discussed previously.

It is interesting that while the two suffixes *-is* and *-aj* for the most part maintain their own territory, they overlap with regard to two distinct, homophonous terms: *b'aah-* 'image, representation' and *b'aah-* 'head'. This seems to be motivated by the consideration that their distinct referents can be confused in the possessed state—for instance, is *u-b'aah* to be understood as 'his-image'? (Figure 8.1e) or as 'his-head'? (Figure 8.2i). The absolutive (unpossessed) forms of these lexemes brook no such discord, and *b'aah-aj* 'image-ABS' (Figure 8.1a) is clearly set apart from *b'aah-is* 'head-ABS' (Figure 8.2c). Thus, *-is* has a clearly defined territory within the category of intimate possession, serving to mark grammatically unpossessed body parts that would be otherwise bereft of affixation.

Another, smaller subset of nouns taking affixation with *-is* is somewhat harder to explain since they are not body parts per se and because of the apparent optionality of the suffix in occasional unpossessed forms. Thus, there are not only glyphic examples of

'middle, center, medium-sized' (Laughlin 1975: 74) Yukatek *ool* ~ *oolal* ~ *oolal* 'heart, will, reason' (Bricker et al. 1998: 17) and Ch'ol *ohlil* 'center, middle' (Aulie and Aulie 1978: 90) suggest a reconstruction along the lines of PM **o'hl* 'heart' (Søren Wichmann, personal communication, 2000).

135. Where previous interpretations of the **U-k'a-b'a** collocation on Piedras Negras Panel 2, T1–V1 (Figure 8.2h) have seen it as a phonetic spelling of *u-k'ab'a* 'his-name', Simon Martin (1997: 860) has convincingly demonstrated that the spelling is best understood as *u-k'ab* 'his-hand', and that it was part of a traditional title or namesake carried by rulers of Calakmul. Other examples appear on the Naranjo HS and K6751 (Kerr 1987–2000) in the form **U-K'AB'**. Another clear example of **U-K'AB'** 'his-hand' turns up on the Tonina stucco façade (Yadeun 1992: 2), and the possessed prepositional phrase **tu-(u)-k'a-b'a t-u-k'ab'** 'from his hand' or 'by the hand of' can be found on both Site Q Panel 11 (B2; see Martin n.d.) and Palenque's West Tablet of the Temple of the Inscriptions (at P11; Schele and Mathews 1998: 103).

136. There are numerous examples of **TI'** signs in the inscriptions, though very few are unpossessed. The sign was deciphered by David Stuart (see Stuart et al. 1999b: 38) and further examples and derivations can be found in Zender (1999: 74–83).

137. While glottal-initial nouns are most commonly possessed with the *y-* allomorph of the third-person ergative pronoun, 'face' is a somewhat turbulent lexeme in Mayan languages and a known exception to this rule. Compare, for instance, Ch'orti *hut* ~ *ut* 'face of person or animal' and *u-'ut* 'its-face' (Wisdom 1950b: 474).

k'ahk'-is 'fire-ABS' (Figure 8.3a) and *u-k'ahk* 'his-fire' (Figure 8.3b) but also numerous examples of unpossessed and unmarked *k'ahk* 'fire' (Figure 8.3c). Similarly, a still undeciphered sign depicting a cigar-smoking head is regularly marked with *-is* (Figure 8.3d),¹³⁸ but is also known to appear without this suffix (Figure 8.3e). It should be noted that it never, to my knowledge at least, appears in a possessed form. How are we to accommodate these deviations from the expected pattern? If allowed to speculate, I would suggest that culturally loaded terms such as 'fire' and 'tobacco' may occasionally have crossed a fuzzy boundary separating normally free-form nouns such as *k'ahk* 'fire' from intimately possessed items like body parts. Similar patterns can be observed in Mam and Sakapultek, where despite a strong predilection for certain subcategories to take distinct affixation, boundary-crossing and bivalent noun-stems are not unknown (Du Bois 1981: 189; England 1983: 67-71). But why should such a feature affect only certain script nouns, like *k'ahk* 'fire' and, quite possibly, 'tobacco'? As it turns out, kings are often depicted in Maya art engaged in sacred acts of drilling fire (Stuart 1998), and the resultant fire is usually intimately possessed by the ruler as *'u-k'ahk* 'his fire'. Thus, where the unmarked *k'ahk* is simply 'fire', *'u-k'ahk* and the marked form *k'ahk'-is* have become metaphoric extensions of the ruler's body—symbols of his ability to tame nature. Similarly, it is not unnatural that tobacco should be singled out for special treatment; it is a sacrificial offering par excellence, and symbolic of the king's capacity to tap into the divine. Indeed, some of the more stylized examples of this "smoking" glyph intimately weld the cigar to the lips of the figure, or elide it completely in what is perhaps a graphic expression of this metaphoric extension of tobacco as an intimately possessed body part (see especially Robicsek 1978: 24, fig. 27). After some careful consideration, then, these aberrant examples may be best thought of as the exceptions that prove the rule. In any case, *-is* passes muster as an absolutive suffix predominantly marking unpossessed body parts.

The -Ø Absolutive Suffix of Kinship Terminology

Unlike personal items and body parts, glyphic kinship terms have been fairly well understood since at least the early 1970s (see T. Jones and Jones 1995, sec. 92: 1–29 and Stuart 1997 for able summaries), and numerous examples are known from Classic period inscriptions across the Maya lowlands. Less clear for a number of reasons, however, has been the issue of intimate possession in kinship terms. First, kin are usually mentioned on monuments only if they are directly relevant to a ruler's claims to the throne—that is, his or her rank and proximity to the patrilineal descent line. Thus, unpossessed kinship terms only very rarely appear in the inscriptions. Second, as we have seen, modern Ch'ol is rapidly losing the feature of intimate possession (probably due to Spanish influence), and modern Chontal has drastically revised its inherited system in favor of the obligatory possession of kinship terms and body parts. Since these languages are among the best documented in the Ch'olan family, the absence of intimate possession in Western Ch'olan kinship terms has led many scholars to see this distinction as unmarked in the hieroglyphic texts as well. However, Ch'olti' and Ch'orti'—two Eastern Ch'olan languages—mark

138. Examples include Yaxchilan Lintel 47: C5 (Graham 1977 3: 103) and Río Azul Jade Plaque 1 (at B8–A9; Dütting 1987: 197).

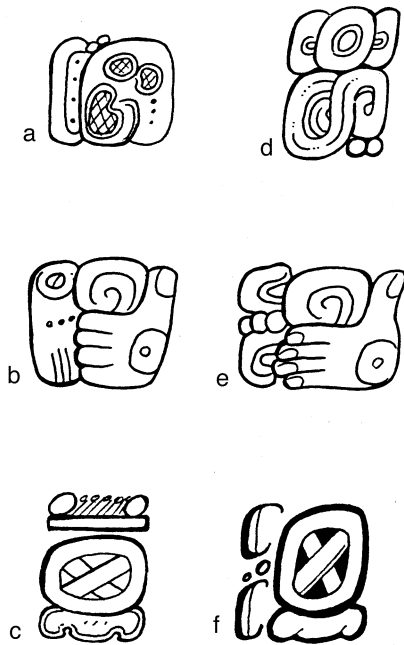


Figure 8.4. -Ø absolute of kinship terms. (a) **u-ne²**, *unen-Ø* 'baby-ABS', Palenque Temple of the Foliated Cross, F3, after a drawing by Linda Schele. (b) **b'a-AL**, *b'a-al-Ø* 'first-child.of.woman-ABS', Tonina Monument 69, F1, after drawing by Peter Mathews. (c) **a-AT-na**, *atan-Ø* 'wife-ABS', Tikal Group 6D-V, after drawing by Linda Schele. (d) **yu-ne²**, *y-unen* 'his-baby', unprovenanced panel, after Mayer (1987: pl. 104). (e) **ya-AL**, *y-al* 'her-child.of.woman', El Peru Altar 1, after drawing by Linda Schele. (f) **ya-AT-na**, *y-atan* 'his-wife', unprovenanced vessel, after K2794 (Kerr 1989–2000).

these terms with an innovative *-b'-il* and *-b'-ir*, respectively, and this raises the possibility that glyphic kinship terminology may have been marked in some manner as well.

Unfortunately, only three kinship terms are known to occur in unpossessed form in the hieroglyphic script: *unen-Ø* 'child-ABS' or 'baby-ABS' (Figure 8.4a), *b'a-al-Ø* 'first-child.of.woman-ABS' (Figure 8.4b) and *atan-Ø* 'wife-ABS' (Figure 8.4c). The possessed forms of these kinship terms are *y-unen* 'his-child' or 'his-baby' (Figure 8.4d), *y-al* 'her-child.of.woman' (Figure 8.4e) and *y-atan* 'his-wife' (Figure 8.4f). I am admittedly hesitant to posit a zero-morph marker of kinship terminology in the inscriptions based on just these three contexts, but I hasten to point out that the issue of marking is really secondary to our primary concern with the morphology of intimate possession. Regardless of whether the class of kinship terms bears a -Ø or is merely unmarked when not possessed, it is certainly clear that the script distinguished between this category and that of body parts (always marked with *-is*) and items of personal property (unfailing marked with *-aj*). That said, more evidence will be needed before we can establish the -Ø absolute marker of unpossessed kinship terms beyond equivocation.

Discussion

Evidence from hieroglyphic inscriptions strongly suggests that Classic Ch'olti'an, the language of the Maya hieroglyphic script (Houston et al. 2000), can be counted among other languages from the K'iche'an and Tzeltalan subgroups in conserving an ancient, proto-Mayan distinction between three distinct subcategories of intimate possession (Sarles 1966: 65–68; Alberto Tzul and Tzimaj Cacao 1997; Dayley 1985: 144). Hence, this language distinguished between personal property, body parts, and kinship terminology through the use of distinctive absolute suffixes. While the script's *-aj* suffix has a sound

etymology in proto-Mayan *-*aj*, however, the *-is* of body parts and the possible -Ø of kinship are more irregular and require some further explanation.

Most striking, perhaps, is the remarkable formal and functional similarity of the hieroglyphic script's *-is* suffix to the *-is* absolutive suffix of the Poqom languages: Poqomam and Poqomchi'. As we have seen (in examples 10–12 above), Poqomam marks unpossessed body parts in constructions such as *q'ab'-is* 'hand-ABS' (García Ixmata and England 1997: 89) and *oq-is* 'foot-ABS' (Santos Nicolas et al. 1997: 68–69). Poqomchi' also marks unpossessed body parts in this way—including a number of the roots we have seen in the hieroglyphic script, such as *wach-is* 'face-ABS', *naah-is* 'head-ABS', *chi'-is* 'mouth-ABS', and *q'ab'-is* 'hand-ABS' (Brown 1978: 51–58). Both of the Poqom languages use the *-is* suffix alongside other markers such as *-b'ees* and -Ø that mark kin terms and items of property, respectively (García Ixmata and England 1997: 86).

The relationship could hardly be closer, and the conclusion must be that these suffixes are identical—yet how can this be? Poqomam, Poqomchi', and Classic Ch'olti'an have not shared a common ancestor since the breakup of proto-Mayan (Kaufman 1973; Houston et al. 2000: 322), and while a proto-Mayan absolutive suffix for body parts can be reconstructed as *-*Vj* ~ *-*aj* (see Houston et al. 2001: 43), there is no convincing evidence outside of either Poqomam, Poqomchi', or the hieroglyphic script for an *-*is* absolutive of body parts. Indeed, the best evidence suggests that this role was already filled by *-*aj*. Thus, genetic arguments for the origin of this suffix—that is, both the Poqom languages and the hieroglyphic script may have inherited it from proto-Mayan—are somewhat less than convincing. Another possibility which bears consideration is that *-is* represents an innovation in one of these languages and that it may have diffused from that language to the other. Since the Eastern Ch'olan and the Poqom languages are neighbors, having long shared a border just south of the Río Motagua in southern Guatemala, this hypothesis seems worthy of exploration.

Besides the chronological data—which demonstrate that Classic Ch'olti'an had the *-is* suffix at least some ten centuries before it can be documented for the Poqom languages¹³⁹—there is strong evidence that both Poqomam and Poqomchi' were heavily influenced at least as early as the Classic period by Ch'olan languages (Kaufman 1976a: 109). Poqom borrowings from Eastern Ch'olan languages specifically include a large suite of lexical items (Kaufman 1976a: 111; Justeson et al. 1985: 9–17), distinctive sound changes such as *b' > p'* (Campbell 1977: 115–16), and a large number of grammatical categories, including even the feature of split ergativity (Robertson 1992: 139–47). A number of scholars have seen this dramatic Ch'olan impact on Poqomam and Poqomchi' (as well as on Q'eqchi' and Yukatekan) as the linguistic corollary of the social prestige and political influence of these primary carriers of Classic Maya culture (Kaufman 1976a: 111; Justeson et al. 1985: 9–17; Houston et al. 2000). Given this evidence, it seems reasonable that the Poqom languages may also have borrowed *-is* from Classic Ch'olti'an.¹⁴⁰ This language had likely innovated the suffix to specifically mark unpossessed body parts

139. The *-is* suffix makes its earliest appearance on Yaxchilan Lintel 47: C5 (Graham 1977: 103), which bears the dedication date 9.4.11.8.16 2 Cib 19 Pax, or February thirteenth, A.D. 526. By contrast, Poqomam *-is* is first documented in the late sixteenth century (Campbell 1977: 124–26).

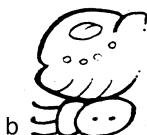


Figure 8.5. Possible Western Ch'olan *-al* absolutive of body parts.
 (a) **IX-k'a-b'a-la-XOOK-ki**, *ix k'ab'al xook* 'Lady hand-ABS shark' or 'Lady Shark Fin', Yaxchilan L.25, R2–S2, after drawing by Ian Graham (1977: 56). (b) **k'a-b'a-si**, *k'ab-is* 'hand-ABS', Tikal miscellaneous text 48, burial I 16, after drawing by Annemarie Seuffert.

alongside earlier PM **-aj*, which would then have become restricted to marking unpossessed items of personal property.

Further, these data would also seem to account for the extreme rarity in the hieroglyphic script of the Western Ch'olan *-al* absolutive—which is reconstructed on the basis of Ch'ol *-äl* (examples 4–6, 13–15 above) and Acalan Chontal *-al* (Bricker 1986: 44). While the context is somewhat equivocal, the name of a prominent eighth-century Yaxchilan noblewoman, *Ix K'ab'-al Xook* or 'Lady Hand Shark' ~ 'Lady Shark-Flipper', may incorporate the unpossessed noun *k'ab'-al* 'hand-ABS' (Figure 8.5a) rather than the expected *k'ab'-is* (Figure 8.5).¹⁴¹ If accepted, this example is quite late, no earlier than the mid-seventh century, whereas Yaxchilan and other western sites display evidence of earlier and far more extensive usage of the Eastern Ch'olan *-is* absolutive suffix for body parts. Moreover, the context is a personal name, and perhaps therefore less tied to the panregional prestige language. In light of these observations, it is interesting that Western Ch'olan *-al* occurs only in the west, and this may be additional evidence, complementary to the suggestions of Lacadena and Wichmann (2000, 2002), of a Western Ch'olan vernacular spoken in this area during at least the Late Classic period.

Be that as it may, the *-al* suffix was also clearly innovative (Houston et al. 2001: 45), and seems to have displaced PM **-aj* in Western Ch'olan and to have eventually extended its frame of reference to dominate the paradigm of intimate possession. It also seems to

140. This analysis was first suggested to me by John Robertson (personal communication, 1999) after initial circulation of my interpretation of the script's *-is* suffix. He too sees Ch'olan areal influence over Poqomam as an important corollary to this proposition.

141. The potential *-al* absolutive suffix in this name was independently noted by Alfonso Lacadena (personal communication, 2000). There is room for some equivocation, however, since the context could well be adjectival, with 'hand' modifying 'shark'. Moreover, there is a very common *-Vl* adjectivizer attested in Ch'olan languages, which could well have derived *k'ab'* 'hand' as *k'ab'-al*, HAND-ADJ, or 'hand-y, hand-like' (Houston et al. 2001; Zender 2000c: 1044–45). In an earlier version of this paper, circulated among colleagues, I had advocated another example of Western Ch'olan *-al*, namely the **B'AAK-le (wa)-WAY-(wa)-la** > *b'aak-el way-al* 'bone-INALIENABLE spirit.companion-ABS' title carried by the Palenque kings K'inich Kan B'ahlam II (A.D. 635–702), K'inich Ahku'l Mo' Naahb' III (678–736), and K'inich K'uk' B'ahlam II (reigned 764–799?), which occurs most clearly on Palenque's Tablet of the 96 Glyphs (I2). As David Stuart (personal communication, 2000) points out to me, however, an unexplained *-wa* confounds my original transliteration, and strongly argues against the interpretation of *way* 'spirit-companion'. Rather, *wayaw*—a derived stem perhaps meaning 'sorcerer' or 'shaman'—seems to be the bearer of the unexplained *-al* suffix, and the collocation is therefore not directly applicable to our concerns in this paper.

have areally influenced its neighbors, Tzotzil and Tojolab'al, which may well have adopted *-ol* (< **-al*) and *-al*, respectively, from Western Ch'olan languages. This is the exact opposite of the development we see in Eastern Ch'olan, where the hieroglyphic script seems to have employed *-is*, *-aj*, and *-Ø* alongside one another to mark distinct subcategories of intimate possession. By Ch'olti' and Ch'orti' times, these distinctions were lost almost as fully as in modern Chontal, and only a *-b'-il* and *-b'-ir* of kinship remain (Bricker 1986: 44; Perez Martinez et al. 1994).

This brings us to the question of Classic Ch'olti'an *-Ø* and the ultimate provenance of Ch'olti' *-b'-il* and modern Ch'orti' *-b'-ir*. While Robertson (in Houston et al. 2001: 45) has reconstructed a proto-Mayan **-b'-* absolutive suffix for kinship terminology, I strongly suspect that the presence of this suffix in modern languages is the result of areal influence, not heredity, since it is found only in Q'eqchi' *-b'-ej*, Poqomam *-b'-ees*, Poqomchi' *-b'-ees*, Ch'olti' *-b'-il*, and Ch'orti' *-b'-ir*. As we have seen, these languages have been neighbors for at least ten centuries, and Poqomam, Poqomchi', and Q'eqchi' have each borrowed a tremendous number of lexical, phonological, and grammatical features from Eastern Ch'olan languages (see above). I propose, therefore, that Eastern Ch'olan lost what may have been its original *-Ø* absolutive of kinship terminology (as documented in the hieroglyphs) at the same time that it lost the *-aj* of property and the *-is* of body parts. Later, this language seems to have innovated a *-b'-* absolutive morpheme, which it then passed on to both of the Poqom languages and to Q'eqchi'.

What, then, was the proto-Mayan suffix for kinship terminology? Robertson (in Houston et al. 2001: 45) has suggested **-tz-*, based in part on K'iche'an *-ätz* (Houston et al. 2001: 45), Mamean *-atz* (Du Bois 1981: 181–89) and Yukatekan *-tz-il* (MacLeod 1987: fig. 8.32) of kinship terminology, and this seems a very reasonable proposition. However, it is also quite likely that Q'anjob'al *-Ø* (Diego Antonio et al. 1996: 241), Yukatek *-Ø* (Bricker 1986: 36–39), and perhaps even Classic Ch'olti'an *-Ø* of kinship could all hail from an ancestral proto-Mayan **-Ø* kinship marker. Thus, proto-Mayan could well have had both **-tz-* and **-Ø* as alternative absolutive suffixes for kin terms, and while Classic Ch'olti'an lost the former before its first appearance in the hieroglyphic script, it seems to have preserved the latter throughout the Classic period until at least the early Postclassic period (ca. A.D. 900).

Conclusions

The proposal made in this paper is that body parts, kinship terms, and certain types of culturally loaded personal property such as clothing and jewelry were intimately possessed in Maya script. That is, these nouns were closely associated with a human agent or other animate entity even when not explicitly possessed through overt grammatical possession. They could not be referenced, even generally, without some explicit acknowledgement of that association. Study of possessed and unpossessed forms reveals that this feature of possession-in-absentia was accomplished through the use of at least two, and perhaps even three distinct absolutive suffixes. First, unpossessed terms for personal property were marked with *-aj*, a descendant of the proto-Mayan **-aj* absolutive of body parts. Second, absolute nouns for body parts were marked by *-is*, a Classic Ch'olti'an innovation that analogically restricted the scope of *-aj* to items of personal property. This -

is suffix was borrowed by the Poqom languages (where it is still preserved) before being lost by Eastern Ch'olan languages along with most other features of intimate possession. An analogical but distinct history is to be found in Western Ch'olan languages, which innovated an *-al* suffix to mark unpossessed body parts. Eventually, this suffix either took over the paradigm of intimate possession (as in Ch'ol) or all intimately possessed terms became obligatorily possessed (as in Chontal)—both pathways led to the loss of the earlier absolutive suffixes *-aj*, *-tz-*, and *-Ø*. Finally, the hieroglyphic script may have marked unpossessed kinship terms with *-Ø*, a direct descendant of proto-Mayan **-Ø* absolutive of kinship terminology, or may have simply left these terms unmarked. While all of these forms are explicable in terms of patterns evident in the K'iche'an, Mamean, and Ch'olan-Tzeltalan subgroups, the particulars of the formal and semantic evolution of these suffixes, their interaction with other languages, and their geographical contiguity point most strongly to an ancestral form of Eastern Ch'olan—specifically Classic Ch'olti'an—as the language underlying the inscriptions (Houston et al. 2000; Zender 2000b).

Perhaps most interestingly, these data have also made possible a fresh engagement with the semantics of Classic Mayan nominal morphology, and with pan-Mesoamerican concepts of intimate possession. The evidence analyzed suggests, among other novel insights, that the images on classic Maya stelae were not so much the “self” or “embodiment” of the ruler, as has previously been suggested, but may rather have been thought of as intimately possessed personal items, like in kind to heirlooms, royal gifts, and items of personal adornment (such as collar jewelry and earspools). A related series of expressions suggests that the fire produced in drilling rites and the tobacco offered to ancestors and patron gods by Maya rulers may have been considered a metaphorical extension of their very bodies; a means by which kings may have provided direct sustenance to the beings inhabiting the “other” realm from which they drew their divine authority, their sacred charter, and their right to rule.

Acknowledgments

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NINE

Telling Time in Classic-Ch'olan and Acalan-Chontal Narrative

*The Linguistic Basis of Some Temporal Discourse Patterns
in Maya Hieroglyphic and Acalan-Chontal Texts*

ROBERT F. WALD

University of Texas at Austin

Recognition and Interpretation of Patterns

INTRODUCTION

The main focus of this essay is a set of glyphic affixes that has been recognized for some time but has received renewed attention over the past few years. Although a seemingly esoteric and perhaps insignificant topic at first glance, these affixes have proved to be the key to understanding how time is approached grammatically in the Maya hieroglyphic texts. Depending upon how they are interpreted, views range from (1) a more traditional view that the verb system employs suffixing for incompletive and completive aspects along with past perfect and future indicators for temporal placement, (2) a more recent view of the narrative as switching between present and past with suffixing for the past tense, an inflectional system unique among the Mayan languages, or, as I see it, (3) a system with no inflectional suffixing for present/past tense or incompletive/completive aspect but with adverbs including adverbial enclitics, dates, and other contextual means for indicating time, similar to that reconstructible for proto-Mayan.

THE AEI-PEI EUPHEMISMS

Several early epigraphers including Goodman (1897: 113–18) and Förstemann (1904a: 578–80, 1904b, 1904c: 586–87) noted that the temporal relationships of specific hieroglyphic texts varied, sometimes proceeding in a straight line forward and sometimes back. Almost a half-century later Thompson (1943; 1971: 162–63) identified two different glyph blocks, one of which often accompanied earlier dates and the other later dates (Figure 9.1). He called these “anterior and posterior date indicators” (ADI and PDI), which

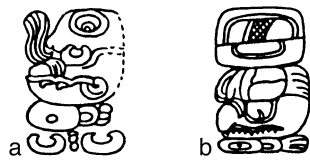


Figure 9.1. Glyph collocations designated the ADI (a) and PDI (b) by Thompson (1971: fig. 2)

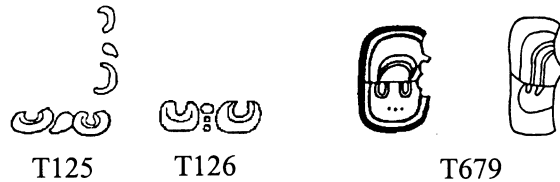


Figure 9.2. Examples of the glyphs referred to as the AEI (T125, T126) and PEI (T679).

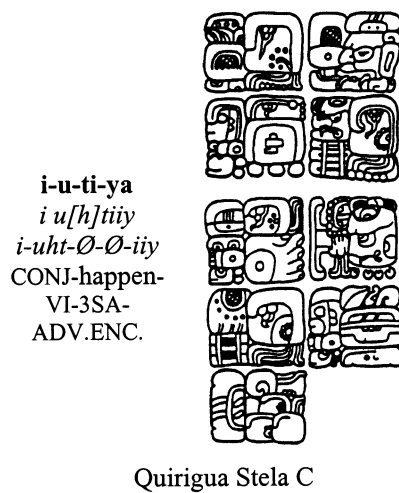


Figure 9.3. Example of the verb *uht* with both T679 *i* and T126 *ya* affixes, apparently marking the verb as both a posterior and anterior event. Drawing by Matthew Looper (1995: 374).

were distinguished one from the other by the presence or absence of a specific postfixed or prefixed glyph. Lounsbury (1974a: 17) pointed out that both the postfix and prefix could be attached to other glyphs as well and called these affixes, shown in Figure 9.2, the anterior event indicator (AEI) and the posterior event indicator (PEI). Glyphs reporting earlier events were often prefixed by T126, the AEI, and those reporting later events by T679, the PEI.¹⁴²

These identifications are accurate insofar as they generally explain how these glyphs function in context. However, a few inscriptions, such as Copan Stela C (Figure 9.3), contain passages that seem to contradict these descriptions of their function. Both the AEI and PEI are present in the same collocation. But how could a specific event be both posterior and anterior at the same time? A solution to this problem is offered later.

Another difficulty is that those identifications belong to an arguably prelinguistic stage

142. Although Thompson distinguished between the two, Alfonso Lacadena (personal communication and also Lacadena 1995: chapter 2) notes that “the differences between T125 and T126 are only of time, the first being older than the latter, not of reading.” He also notes that T47 and T133 belong to this same group and are all to be read as *ya*. For reasons of brevity, this whole group will be referred to as “T126.”

of decipherment. It was David Stuart (1991) who brought the discussion up to the level of language by identifying the core of each to be the verb *ut-* (*uht-*), ‘to happen, occur’. He also identified the AEI as syllabic *ya* (Stuart 1987: 32). The PEI was already included in Chi and de Landa’s “a,b,c” as *i* (see George Stuart 1988a for an exact facsimile). J. Kathryn Josserand (1991: 14) views the PEI as the predecessor of the Ch’ol conjunction *i* which serves to highlight or draw attention to the event that follows in the narrative.

LINGUISTIC ALTERNATIVES

*The Deictic Enclitic -ix*¹⁴³

Before Stuart firmly established his syllabic *ya* decipherment for T126, William Norman (cf. Fox and Justeson 1984: 60) had proposed *ix* instead. This reading was promoted by J. Kathryn Josserand and Nicholas Hopkins especially because it matched the discourse patterns of most texts so well (see Josserand 1991: 15). It corresponds to an enclitic attached to verbs in Acalan Chontal, Ch’ol, and Ch’orti’ with the general meaning of “already” and signals “time in the past.” Although it rests upon an unlikely decipherment, it is nevertheless important for the argument being presented here since it finds the solution in an adverbial deictic enclitic rather than in straightforward verbal inflection. It presents a linguistic equivalent of the AEI that maintains its contextually verifiable discursive characteristics.

Pluperfect Tense/Aspect

There are grammars in some of the Ch’olan languages that interpret the *-ix* enclitic as verbal inflection for the past perfect (pluperfect), including Warkentin and Scott (1980: 41, 72) for Ch’ol and Pérez Martínez et al. (1994: 67) for Ch’orti’. It seems likely that these interpretations and perhaps even actual usage have been influenced by the overwhelming influence of the Spanish language and began centuries ago with the need to translate tense/aspect such as the pluperfect into these Mayan languages. Linda Schele (1990: 26) at one time interpreted the backgrounded verbs as inflected for the pluperfect, an alternative that she first related to deciphering T126 as *ix*. Schele (1991: 37) then abandoned the *ix* decipherment, but retained the interpretation of the verbs on the main timeline as perfective (completive) and those in the background as past perfect. This tactic often led to appropriate translations especially for direct referential connections from an earlier event to a later one. However, in other instances, the pluperfect was not a good fit. Also, while it offered a practical solution, it did not provide a verifiable linguistic source for the forms that matched the current epigraphic knowledge.

Completive Inflection

One of the more common views of Classic period verbal morphology in the 1980s and ’90s predicted a distinction between incomplete and completive aspects by means

143. I follow Kaufman and Norman in using “clitic” as a term for “morphemes that cannot appear as independent words in discourse but must be attached to some other word.” They are not inflection and “can be attached to more than one word type” such as *ix*, which can be attached (as distinct from suffixed) to “verbs, adverbs, adjectives, and nouns” (Kaufman and Norman 1984: 94). Clitics attached to the front of words are called “proclitics” and those attached to the end “enclitics.”

of suffixes. That view was based on analyses of colonial and modern Ch'olan and Yukatekan languages. One of the major problems with this view was that examples of the expected incompletive aspectual forms were practically nonexistent. A more recent alternative offered by Stephen Houston (1997: 297–300) suggested that previous analyses had incorrectly characterized the aspectual inflection of most verbs in the hieroglyphic texts. He suggested instead that verbs on the main timeline were inflected for incompletive aspect. Those referring to anterior events and suffixed by glyphic *ya* were inflected for completive aspect. The aspectual distinction was made for all intransitive but not for transitive verbs, following a pattern also true of Ch'olti' and Ch'orti'. This analysis offered a linguistic rationale that could be reinforced by an iconographic one since verbs reporting an event actually depicted on the monuments are not accompanied by *ya* (see also Stuart 1996: 165).

This theory has its own drawbacks and problems. Its interpretation of the narrative timelines receives little support from the early colonial documents such as the Acalan-Chontal and the Chilam Balam documents. In them, the incompletive aspect is usually used in narrating general or repeating events such as this from the *Chilam Balam of Chumayel*:

Mac - 13 marzo, licil yalancaan aac

Mak, March 13, when the turtle lays eggs. (Luxton 1995: 40–41).

However, when reporting on past events such as a one-time capture, the completive aspect is used as in this Acalan-Chontal example from the *Paxbolon-Maldonado Papers* (hereafter *PMP*).

Hain castilla uinicob yithoc padreobi ahuli **uchuci** cab . . . (AGI 1614: 163.5–6;
Smailus 1975: 70.1–2)¹⁴⁴

Those Spanish men along with priests came and **captured** the land.

Contrast this with the incompletive from the same document:

Yuual uthane uthan Dios (AGI 1614: 167.1; Smailus 1975: 94.5)

Now they **speak** the word of god.¹⁴⁵

144. The Acalan-Chontal text will be referenced by page and line number of the original, a facsimile of which can be found following page 366 in Scholes and Roys (1968). Smailus (1975) also includes these numbers with his version of the text. Whenever Smailus's Spanish rendition is quoted, reference will be made after it to page numbers and line-group numbers (counting from the top of each page) in his publication. When his Spanish translation is not included, references to both works will immediately follow the Chontal original. All English versions are mine. The line-group numbers of the Smailus rendition are also used in the fine concordance prepared by William M. Ringle (1991), which is very useful as an index but also dangerous because it often uses reconstructions and other spellings not in the original Chontal. It should not be used directly without further reference to the original when accuracy and reliable frequency counts are required.

145. Note that in English one could just as well write "now they are speaking. . . ." However, this is due to the character of the English present tense, which tends to reserve the simple present for statements of general fact and otherwise needs to resort to the progressive. That is not the case in many languages

Here the writer is concerned with the ongoing situation that began with the coming of the Spanish priests. Most characterizations of incomplete aspect in Mayan languages stress its use with actions that are habitual, repetitive, or ongoing from the standpoint of the speaker or writer (see Robertson 1992: 64). Still, it is true that the incomplete aspect can be used in these languages for events that would be expressed as present tense in Spanish or even in English. But in the inscriptions, many of the verbs without *ya* report events that happened long before the depicted event and approximate date when the monument was carved. They are also often births and deaths, which are not the types of events that are usually considered ongoing. Their connection in the discourse patterns of the inscriptions to specific dates makes it even more unlikely. To overcome these problems, Houston (1997: 299–300) identifies a narrative technique he characterizes as a “shifting now” that employs a “historical incomplete,” similar to the English “historical present” to explain how the incomplete could have become the dominant aspect in what are mostly historical texts. The suggested complete in *-iŷy* is relegated mainly to passages that refer back to previous events.

Past Tense Inflection

The “historical incomplete” theory was proposed partly as an alternative to a longstanding interpretation of glyphic *ya* as accompanying a prior event when juxtaposed to a later event on the current discourse timeline. But considering its frequent association with distance numbers and dates, the temporal function of the underlying morpheme was really never in doubt. Interpreting it as signaling an aspectual difference without offering a substantially modified analysis of these passages was unsustainable.

As an alternative, Robertson, Houston, and Stuart (this volume) offer a clever, albeit unlikely, new alternative.¹⁴⁶ Faced anew with what they believe to be an inflectional suffix *-iŷy* that signals a difference in time, they declare that, indeed, the verbal system of the Classic period inscriptions exemplifies present and past tense instead of incomplete and complete aspect inflection. One has only to accept the change from a Common Mayan incomplete-complete aspect system, to a Classic Ch’olan (“Ch’olti’an”) present-past tense system, then to a return of colonial and modern descendants to an incomplete-complete aspect system. This would have happened in all the Ch’olan languages although, according to Houston et al. (2000), Chontal and especially Ch’ol had separated before any Maya hieroglyphic inscriptions were written. In the last system change, all the inflectional suffixes that indicated present tense during the Classic period marked complete aspect by colonial period times. They could do this because in tense systems, present is the default inflection and, in aspectual systems, complete is the default. The key force or impetus for this change over time was declared to be the progressive aspect, supposedly known to be a driving force in the classic Period and earlier, although completely unattested both in the Classic script and in the only substantial surviving early colonial

including, for example, German and Spanish. It is also not a characteristic of the incomplete in Acalan-Chontal, which is dependent only on the action not being finished regardless of when it occurs.

146. I am basing this very cursory summary on a prepublication version of their essay. Please refer to their contribution in this volume for the final version.

native Ch'olan document, the *PMP*.¹⁴⁷ Finally, they contend that *-iiy* is much too important to have been just an adverb and so must instead have been past-tense inflection.

Adverbial Enclitic -iiy~-ijiiy

In a language with no suffixing for incomplete/completive aspect or present/past tense and no use of grammaticalized auxiliary verbs, adverbs are by no means unimportant. Instead they are powerful lexical syntax and discourse tools for grammatically complex expression (see Wald n.d.b).¹⁴⁸ The best way to demonstrate this for particular languages is not by abstract deductive reasoning, but by close, contextualized analysis of the texts themselves. It is that approach that is followed here in providing evidence that the morpheme underlying the AEI which is so prevalent in the Classic period inscriptions is a deictic, adverbial enclitic. Further evidence is provided by identifying its presence in a colonial-period document written in a descendant language. The hope is that demonstrating the marked similarity of function of this morpheme in both a language without incomplete/completive aspect suffixing and one that has begun to develop it provides further evidence that it is a separate lexical entity and not verbal inflection.

Some Discourse Patterns in Acalan Chontal and Classic Ch'olan

The *PMP* are a part of what is also known as the “Acalan-Chontal document.” Central Mexicans called the area of its origin “Acalan” and its language “Chontal” (Scholes and Roys 1968: 51–52). The *PMP* were written by different authors over an extended period and even included some oral testimony, most of which was probably recorded around the middle of the sixteenth century. Multiple authorship is even more indicative of the Classic-period inscriptions, but differences in usage and spelling are evident in the *PMP* as well. In both bodies of texts, one must keep in mind that we are dealing with *parole* and not *langue*. As such, both the limited variation and the basic unity are important for our conclusions. One must be careful not to dismiss as bizarre whatever does not fit the linguist's own deductive *langue* and instead look to *parole* for hints at the scribes' own understanding of the grammar of their language.

The forms of the target lexeme are similar in both bodies of texts. In Acalan Chontal

147. In fact, *yuuwal* serves as an adverb in the script just as it does in Acalan Chontal. This is not an innovation in Acalan Chontal but a continuation of precisely the type of usage evidenced on Copan Stela J. Its use in the formation of a progressive is clearly the innovation, one that occurred after the coming of the Spanish invaders.

148. Some linguists, especially those whose native languages are accusative (none of whom are mentioned in this essay), have at times striven to reduce all ergative languages transformationally to their underlying accusativity. In light of this lack of objectivity, we must also avoid declaring a priori that all languages must have either incomplete/completive or present/past prefixes or suffixes on verbs or, lacking them, that they must have auxiliaries. Even Comrie (1985: 29–35), in attempting to explain how grammaticalized tenses work, notes the unique importance of adverbs and his (1985: 50–53) references to “tenseless languages” hint at how complex their handling of temporal references can be. The differences among the various types of temporal and aspectual systems are technical and not qualitative. Furthermore, lest there be any misunderstanding, their speakers are not hampered or limited in their ability to express themselves just because temporal references are not made by means of grammaticalized affixes or auxiliaries. They just do it differently.

TABLE 9.1. Examples of the Verb *than* (*t'an*) in the Incomplete, Complete, and Complete with the Deictic Enclitic *-ihi~-i* in the *Paxbolon Maldonado Papers*

[Incomplete:]

- a) *yuaal uthane uthan dios* (AGI 1614: 167.1; Smailus 1975: 94.5)
Now **they** speak the word of God

[Complete:]

- b) . . . *yuaal uthani uchoyel cab* . . . (AGI 1614: 166.25–26; Smailus 1975: 92.6)
. . . then **he** said that the people are moving [it is the people's moving] . . .
- c) . . . *ukal uxlub chanlub uthani takba chançabiliceti* (AGI 1614: 161.17–18; Smailus 1975: 59.6–7)
. . . because **he** said three times or four times to me, “You ought to be killed.”

[Complete + *-ihi~-i* clitic:]

- d) *cahi uyithocbel paxbolonacha ahau acathanihi* (AGI 1614: 159.24–25; Smailus 1975: 48.1–2)
They began to join up [it began their joining up] with Paxbolonacha, the ruler.
I have already mentioned him.
- e) *hal xach hiliob chumuanib ya ta chanpoton acathanihi* (AGI 1614: 162.32–33; Smailus 1975: 68.6–7)
For a long time then they rested and they sat around in Champotón. **I have already said it.**
- f) . . . *uppenel chanpel acathanihi* (AGI 1614: 156.3; Smailus 1975: 28.8)
. . . the son of Chanpel. **I have already mentioned him.**

[Reconstruction and analysis:] *a- ca- than- i- Ø- [i]h-i*
ADV.PRC-1SE-speak-TV.COM-3SA-ADV.ENC

it is an enclitic with two basic allophones, *-ihi* (*-ij-i*) and *-i*. In Classic Ch'olan it has two similar allophones, *-ijüy* (*-ij-iüy*) and *-iüy*. Its etymology and variant forms in related languages are addressed later. Its function in context is addressed first since that is most important for establishing the historical identity of this lexeme in both languages as well as its appearance on different classes of words including verbs.

INTRATEXTUAL SELF-REFERENCE

Although there are hieroglyphic texts written from a first-person perspective and others that quote direct discourse (see, for example, Grube 1998), there have been no texts identified containing first-person, self-conscious reference to something just written. The *PMP* scribes frequently employ this type of back reference. Most often, they use the transitive complete form of the verb whose root is *than* (*t'an*) ‘word’ and as a derived verb means ‘to speak, say’. The examples in Table 9.1a–c show the verb *than* with incomplete and complete inflection in contexts where there is no back reference. More explicitly stated, the referent of the absolutive pronoun *-Ø* is not in a previous sentence or clause and there is no reference to another earlier event. This dependent pronoun, also called a “person

marker,” is a deictic enclitic that here points to a referent in the same sentence. It is a deictic because the person, place, or thing referred to by the pronoun is relative to the context. In example 1a, the referent is *uthan dios*, ‘the word of god’. In 1b, it is *uchoyel cah* ‘the moving of the people’. Despite the pronoun’s being unmarked in these third-person singular examples, its deictic function is still intact. All Classic Ch’olan verbs require a person marker as agent, subject, or object; they do not require an explicit nominal referent.

In the examples in Table 9.1d through 9.1f, the pronominal referent is in the previous sentence and the still earlier mention of the person or event precedes it in the narrative.¹⁴⁹ In Table 9.1d, the referent is *Paxbolonacha*, who was mentioned earlier in the narrative. In the Table 9.1e example, it is the event *hiliob chumuaniob*, ‘they rested and sat around’ that is mentioned earlier by the scribe. It is this time difference in the narrative between the current statements and the earlier ones that triggers the attachment of a deictic enclitic indicating time in the past. That temporal indicator is the adverbial deictic enclitic *-ihi~-i*, which here could be translated into English as ‘already’ or ‘earlier’. In other contexts, a translation such as ‘ago’ or a combination of preposition and temporal pronoun such as ‘from when’ or ‘until’ might be more appropriate. It is a deictic since the time is not definite but relative to the context.

In sum, the enclitic *-ihi~-i* adds temporal information and the dependent pronoun adds identifying information. For these particular contexts, those of intratextual, self-conscious back reference, the temporal difference is that of narrative time and the pronominal referent is physically in the same narrative. So the time referred to in these examples is the recent narrative past. For that reason, the proclitic *a-* is attached to *-cathanihi* and other examples in the *PMP* (see Table 9.1, Reconstruction and analysis).¹⁵⁰ The *a-* proclitic has the effect of moving the time established by the enclitic *-ihi~-i* closer to the present, even up to the immediate past. That is why it is attached to verbs in those sentences that refer to the mention of people, things, and events earlier in the text. The writing or reading of an earlier part of the same text is taken to be something quite recent. The *PMP* scribe does not attach the *a-* proclitic to verbs with the deictic enclitic *-ihi~-i* in other contexts because those events did not happen in the very immediate past as has the composition of the text itself.¹⁵¹

149. These passages have been translated literally. They could have been translated more colloquially with the narrative flow in English in mind, for example, . . . the son of Chanpel, **whom I have already mentioned**. The problem with such translations is that they make *acathanihi* seem like a subordinate clause, which it is not. All the necessary elements are present for it to stand completely on its own as the reconstruction and analysis in Table 9.1 indicates. The sentence *acathanihi* contains neither relative pronoun nor subordinate conjunction but simply the Chontal third-person ergative and absolutive person markers. Note that only a few examples of this verb in similar contexts are included here. There are ten occurrences of this verbal compound in the *PMP* written exactly as these and six more written with two variants but with the same meaning and context.

150. The following abbreviations are used for all morpheme analyses: ADV: adverb; ART: article; ASP: aspect marker; COM: completive aspect; CONJ: conjunction; ENC: enclitic; EP: epenthetic particle; IV: intransitive verb; PART: participle; PAS: passive voice; PRC: proclitic; RSL: resultative; THM: thematic suffix; TV: transitive verb; 1SE: first-person singular ergative (Set A) person marker; 3SA: third-singular absolutive (Set B) person marker; 3SE: third-singular ergative (Set A) person marker; [] (brackets): used to enclose reconstructed letters or morphemes not explicit in the original source; () (parentheses): used to enclose letters or morphemes not specifically required nor always present.

GENERAL REFERENCE TO A PREVIOUSLY REPORTED EVENT

In one of the most common discourse patterns in the Classic period inscriptions, an event such as a birth, accession, or death is reported in a clause or sentence, usually accompanied by the date on which it occurred. It is then followed in a later sentence by a general reference to that already reported event using the verb *uht* ‘to happen’ along with the past deictic enclitic. The form of the enclitic with this verb, as with other CVC intransitive verbs, is almost always the allophone *-iiy*. Figure 9.4 contains an example of this ubiquitous narrative format. Transcribed and translated, the relevant parts of the passage are:

cha’ ak’b’al wak mol nahwaj unuk ukojaw (Ruler 2) *k’in ajaw . . . utz’akaj mi (k’in) ho’la-ju’n winikjiiy uhti y ipas(?) cha’ ak’b’al ju’n kase’w . . .*

On two *Ak’bal* six *Mol*, the surface of the headdress of Ruler 2, the Day Lord, was adorned . . . Its count was no days and fifteen months from when that happened, and then it dawned two *Ak’b’al* one *Kase’w* . . .¹⁵²

In this discourse pattern, information about the elapsed time since the targeted event is given in a distance number. The immediate subject of the intransitive verb plus enclitic *uhti y* is the unmarked (-Ø) third-person absolutive pronoun. As often, it is an event mentioned in a previous sentence. Also as often, at least some portion of the distance number separating the two calendar-round dates has *-ijiiy--iiy* attached, making it evident that the current moment in the event timeline is later than that of the referenced sentence. The person marker accomplishes the reference to the event and the deictic enclitic indicates the placement of that event as earlier in time. The conjunction *i* immediately precedes the next verb and serves as a focus marker meaning ‘then’ or ‘and then’, which introduces the event that is later in time (see Josserand 1991: 14; 1997: 127).

To the extent that a general reference is made to a previous event, this passage from the Classic inscriptions is similar to the *acathanihi* passages in the *PMP*. There is a critical difference, however. In context, the *acathanihi* sentences refer to a narrative event,

151. Note that Smailus (1975) misinterprets this proclitic as indicating simply completive aspect “la acción sugerida por el verbo ya está terminada,” but he also writes that he is not really sure of this interpretation. Instead, the aspectual inflection indicating completive is already provided by the suffix *-i*. Moreover, Keller and Plácido (1997: 240) find this same proclitic *a-* used in modern Chontal and it is used in precisely the same way as it is in colonial Acalan Chontal. “El proclítico *a-* se combina con cualquiera de los dos tiempos generales (presente or pretérito, o con el tiempo específico futuro) para indicar acción inmediata or próxima del tiempo general. . . . Cuando se combina con el pretérito, indica pasado inmediato.” In each context, it moves the time referred to closer to the present. I also disagree with Robertson, Houston, and Stuart (this volume) that the prefix *a-* in the *PMP* “is attached to the completive to give a sense of ‘already’.” That is already supplied by *-ihi--i*. Instead, it moves the sense of “already” or “in the past” to the more recent past. To indicate this in the English translation of the Chontal passages, I could have added ‘just’ as in ‘I have already just mentioned her.’ The problem in English is that combining ‘already’ and ‘just’ in the same sentence is confusing. Both connotations are clearly there in the Acalan-Chontal sentence, ‘already’ by the enclitic *-ihi--i* and ‘just’ by the proclitic *a-*.

152. In this and other translations, the word ‘month’ refers to a twenty-day *winik* (*winal*) period and ‘year’ to the 360-day *haab’* (*tuun*) long-count period. The distance number of fifteen months suggests that the coefficient of *Ak’b’al* is three rather than two. Note also that ‘Its count was’ for *utz’akaj* here is a guess based on one of the meanings of the root. It may be a verb instead of a possessed noun.

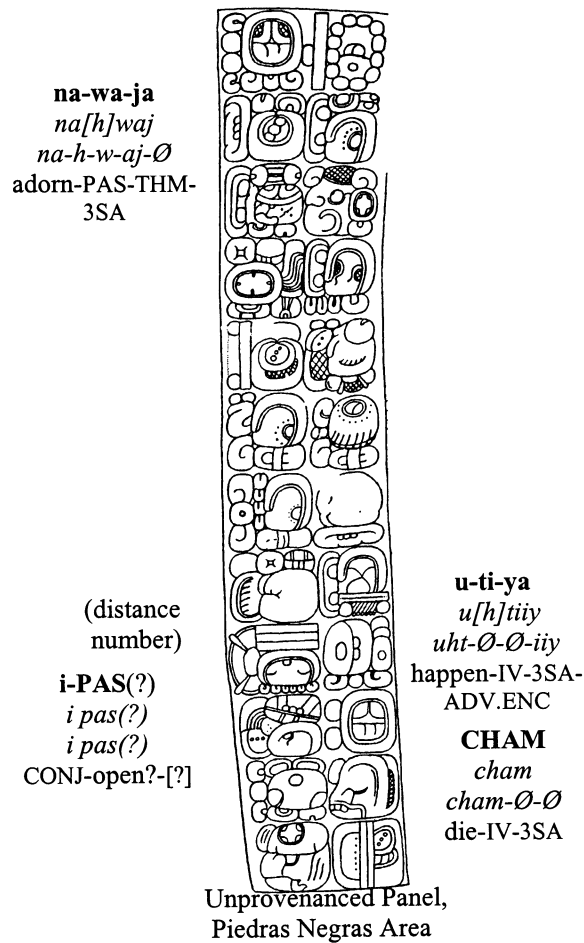


Figure 9.4. Temporal deictic enclitic *-iiy* used in an *uhtiiy* compound for a general reference to a previously reported event. Drawing by John Montgomery (Modified by Wald 1997a: 68).

that is, the previous *mentioning* of a person, place, or event in the text. The *uhtiiy* passage refers to an extranarrative event reported in the text but not to an actual report of that event. It is in the discourse-external event context that the distance number makes sense. But there are examples of another verb in the *PMP* that plays a role almost identical to that of *uhtiiy* in the Classic period inscriptions. That verb is *tal* ‘to come,’ ‘to come about,’ and ‘to happen.’ Here are two of several examples of it used with both the *-ihi* and the *-ix* enclitics:

talibix uyubi Padre frai diego de bejar uthan unicobi (AGI 1614: 164.10–11; Smailus 1975: 77.3–4)

After it (that) happened (came about), Father Diego de Bejar listened to the words of the people . . .

talibix me frai diego pesquera tuchalub (AGI 1614: 166.25; Smailus 1975: 92.5)

After Fray Diego Pesquerale had already come for the second time . . .

Only in the second passage where *tal* is the only verb and retains its literal meaning of ‘to come’ do Smailus and Scholes and Roys explicitly translate it. In other passages, such as the first in which it is used in a more figurative sense of ‘come about’ or ‘happen’, they

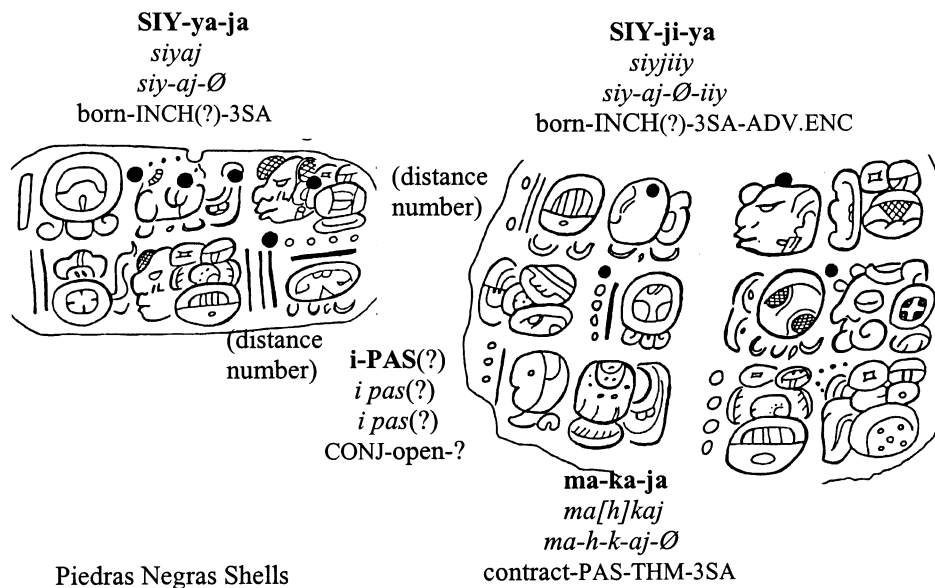


Figure 9.5. The temporal deictic enclitic *-iiy* attached to a verb in a specific reference to an earlier event. The verb and pronoun but not the nominal subject are repeated. Drawing by Linda Schele (in Stuart 1985: 175).

left it out of their translations. Consequently, this narrative style, which closely resembles that of many Classic period texts, and the use of the *-ihi* and *-ix* enclitics in such contexts may have been overlooked in the past. Just as in the Classic Ch'olan *uhtiiy* passage, the referent of the dependent pronominal third-person subject (*-Ø*) of the verb *talihix* is the event that was reported in a previous sentence. The relationship of *-ihi*~*-i* and *-ix* in these and similar compound constructions is discussed in more detail later.

SPECIFIC REFERENCE TO AN EARLIER EVENT

Verb and Dependent Pronoun Repeated without Nominal Subject

Figures 9.5 and 9.6 show another very common discourse pattern used by the Classic period scribes to refer back to a previous event while leading into the next. First, an event is reported and then referred to in a later passage, just as for a general back-reference. But rather than using a verb with a general meaning such as 'happen', these passages specifically identify the actual event again by using the same verb, this time accompanied by the deictic enclitic *-ijiiy*~*-iiy* indicating the direction of the temporal distance between the earlier event and the later one. In both passages, this new event, the arrival of a particular date, is again preceded by the conjunctive discourse marker *i* 'and then', which calls attention to it. Both are then followed by an extra-calendrical event. Part of the passage in Figure 9.5 can be transcribed and translated as follows:

ho' kib' chanlaju'n yaxk'in siyaj ixik (na?) winikhaab' ajaw ixik (na?) man ajaw ho'laju'n b'olon winikjiy lajchan hab'iiy siyjiy ipas(?) b'olon chuwe'n b'olon uniu mahkaj ixik (na?) naman ajaw ukab'jiy (Ruler 2) chan winikhaab' ajaw k'uh(ul) yokib' ajaw.

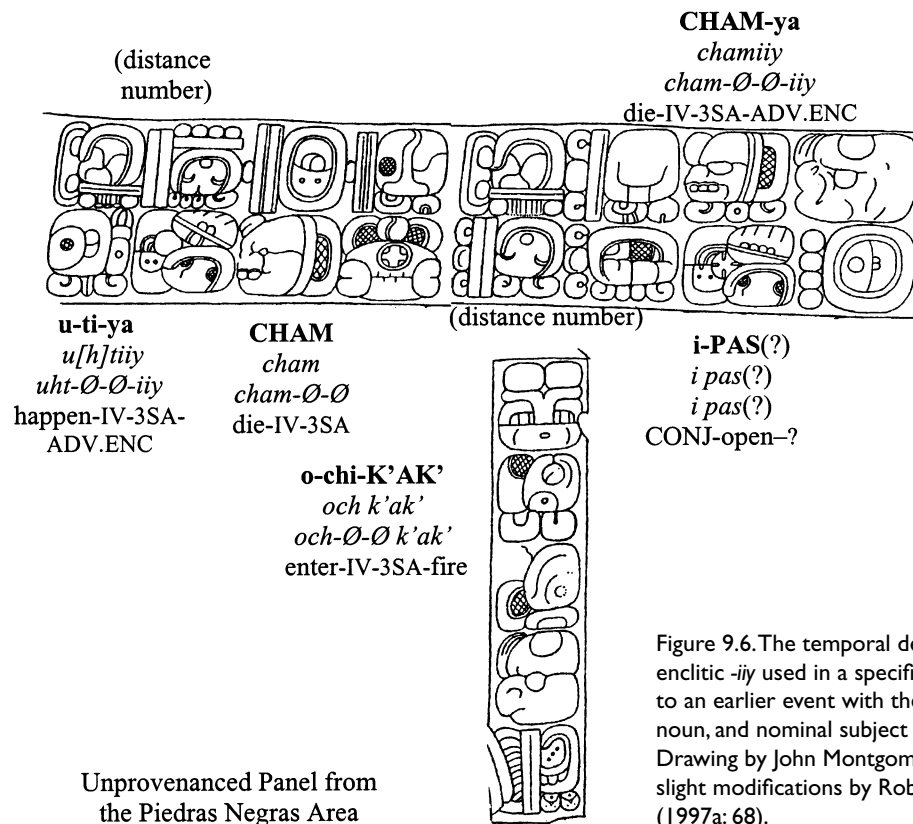


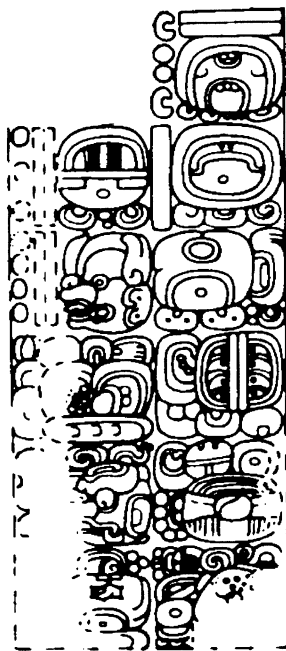
Figure 9.6. The temporal deictic enclitic *-iiy* used in a specific reference to an earlier event with the verb, pronoun, and nominal subject repeated. Drawing by John Montgomery with slight modifications by Robert Wald (1997a: 68).

On 5 Kib' 14 Yaxk'in, Lady Twenty-Year Lord, Lady *Man* Lord was born. It was 15 [days] 9 months and 12 years after she was born and then it dawned 9 *Chuwe'n* 9 *Uniiw* [when] Lady *Naman* Lord was betrothed. He oversaw it, (Ruler 2) the 4-score years Lord, the holy "Piedras Negras" Lord.

Although the referenced event is reported in the immediately preceding passage, the scribe uses the same specific verb instead of a general one. The previous passage is no longer needed to explicitly identify the event. But because this sentence uses only a deictic pronominal subject (-Ø), it still depends on and refers back to the previous one for the actual nominal subject. Although the second verb in Figure 9.5 is specific and does not depend syntactically or semantically on that previous use of the same verb, the lack of a nominal subject might still cause confusion unless the grammatical subject was the same. For that reason, even sentences such as these tend to follow immediately after the original just as do those with a general verb. This would not necessarily be true of an example such as that shown in Figure 9.6.

Verb, Dependent Pronoun, and Nominal Subject Repeated

As with the previous two examples, Figure 9.6 illustrates the use of the past deictic enclitic *-iiy* on a verb (*cham*) to provide information concerning the direction of the temporal distance between two events, one mentioned in the current sentence and another following it in the narrative. The relevant portions of the text are:



Tikal Temple 1, Lintel 3.

CHUM-[mu]-la-ji-ya
chumlajiiy
chum-laj-Ø-iiy
 seated-POS-3SA-
 ADV.ENC

Figure 9.7. The temporal deictic enclitic *-iiy* attached to a verb when relating a later event to an earlier one not reported elsewhere in the text. Drawing from Jones and Satterthwaite (1982: fig. 70).

utz'akaj wak k'in b'uluch winikiy ju'n haab'jiiy chamiy k'an xok ipas chan mol cha'
pax

Its count was 6 days, 11 months, and 1 year after *K'an Xok* died and then the day 4
Mol 2 Pax dawned . . .

Although this passage is comparable to that in Figure 9.5, there is a significant difference. Despite being reported earlier, the previous mention is not referred to syntactically at all because the verb, the dependent pronoun, and the nominal subject, *K'an Xok*, are all present in the current sentence. Viewing the actual previous passage in Figure 9.4 makes it clear why. The death reported in the previous passage is that of Piedras Negras Ruler 2 and not that of *K'an Xok* himself. So to avoid a possible misunderstanding as to whose death the current passage refers, the scribe includes all of the necessary information. The deictic referent of the dependent pronoun is contained in the same sentence. The role of the temporal deictic enclitic remains the same, indicating that this event occurred prior to the next.

Event Earlier in Time but Not Reported Elsewhere in Text

The passage in Figure 9.7 from Tikal Temple 1, Lintel 3 carries the discourse strategy exemplified in Figure 9.6 to the next level. Taken out of context it seems little different from the one we just observed.

cha [k'in], laju'n winikjiiy uxlaju'n haab'iiy ho' kib chanlaju'n suutz' chumlajiiy ti
kalo'mte'lel jasaw chan k'awiil k'uh(ul) mutu'l ajaw i(?) kuchiy(?) nu b'alam chaak

It was 2 days, 10 months, and 13 years after 5 Kib 14 Sotz' [when] he was seated in the *kalo'mte*'ship, *Jasaw Chan K'awiil* holy Tikal lord, and then *Nuun B'alam Chaaknal* was carried.

Just as in Figure 9.6, all three, the specific verb, the dependent pronoun, and its nominal subject, *Jasaw Chan K'awiil*, are included in the current sentence. The difference is that the event is not reported elsewhere in the same text. The temporal deictic enclitic *-ijiiy~-iïy*, however, plays basically the same role. Attached here to both the distance number and the verb *chumljiiy*, the enclitic indicates that *Jasaw Chan K'awiil*'s seating into the office of *kalo'mte*' took place earlier than the event that follows, the carrying of the palanquin. While the distance number gives the exact amount of calendar time, the temporal deictic enclitic indicates that the *kalo'mte*' seating took place in the past relative to it. The time difference here is between extratextual and not between discourse-internal events because there is no immediate previous report. The seating is introduced in the background as if presumed by the author to be part of the audience's knowledge base.

Specific Reference to an Earlier Event in the PMP

Specific reference to an earlier event is also an occasion for the use of the temporal deictic enclitic *-ihi~-i* in the *PMP* as this passage illustrates:

ya ochi chiuoha paçi uzulhaban bayca numon yithocobi ya xach numihi holi tuyestançia francisco maldonado (AGI 1614: 169.1–3; Smailus 1975: 107.7–9)

Then he entered *Chiuoha*. He proceeded by way of *Uzulhaban* where I passed by (or “spent time”) with them. Then after he had passed by (“spent time”), he left by way of Francisco Maldonado's ranch.

Numihi, translated here as ‘after he had passed by (“spent time”)’, plays the same role in the narrative as *siyjiïy* ‘after she was born’ or *chamiïy* ‘after he died’ in previous examples from the inscriptions. It also takes a form of the same adverbial deictic enclitic. The syntax of the Acalan-Chontal passage is slightly more complex. It repeats the same verb (*num-*) twice, both times in the completive aspect, but with the temporal deictic enclitic attached the second time. The subject of the verb varies, being ‘I’, the scribe, in the first instance (*numon*) and ‘he’ Fray Joseph Bosque (*numi[Ø]hi*) in the second. Fray Joseph Bosque is included with them (*yithocobi*) and that sets up the connection between the first occurrence of the verb and the reference back to it in the second.¹⁵³

This example with the verb *num* is important because it illustrates the use of an intransitive verb with the *-ihi* enclitic but without the enclitic *-ix* attached as well. This indicates that the *-ihi* enclitic alone suffices as a temporal indicator in the context of a back-reference.¹⁵⁴ The event is stated the first time inflected for the completive aspect. It is

153. It is also possible that the plural is simply not marked although intended, as is frequently the case in the *PMP* and noted by Smailus (1975: 21).

154. Because the existence and interpretation of the *-ihi~-i* enclitic has not been recognized at all by others, it is relevant to note that neither Smailus's Spanish nor Scholes and Roys's English caught the connotation indicated by the *-ihi* enclitic on *numihi*. Smailus has:

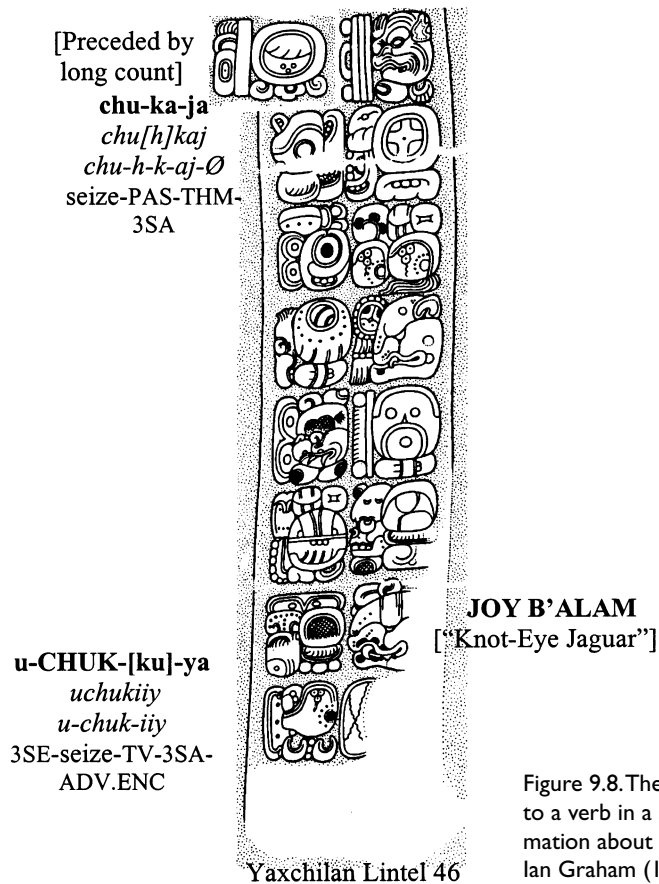


Figure 9.8. The temporal deictic enclitic *-iiy* attached to a verb in a sentence supplying identifying information about a person just mentioned. Drawing by Ian Graham (1979: 101).

restated in the completive aspect but with the enclitic *-ihi* added. Except for the addition of an aspect marker and the lack of a distance number, the pattern is very similar to that encountered in the Classic period inscriptions. It is different in that while the Classic Ch'olan verbs are not inflected for incomplete/completive aspect, the Acalan Chontal verbs are. That the enclitic plays the same role in both bodies of texts is strong evidence that it is not an aspect marker.

Él entró (a la tierra de) Chivohya, pasó por Uzulhaban, donde habíamos **pasado** con ellos (los fugitivos cautivos), y **pasó** por la estancia de Francisco Maldonado (Smailus 1975: 107.7–9).

The Spanish of the original translation equates both *pas* and *num* with Spanish ‘pasar’ while Smailus puts a question mark under his literal ‘él se fue’ translation of *holi* (not shown here). In the freer translation given here, he conflates *numibi* and *holi* into ‘pasó’, and ignores the *-ihi* enclitic on *numihi*. Scholes and Roys do so as well:

... He entered by Chiuoha, **passed** by way of Uzulhaban, and we with him, and from there he **came out** at the estancia of Francisco Maldonado (Scholes and Roys 1968: 404).

Instead, the literal translation I provided in the main text above better represents the role that *numihi* and especially the *-ihi* enclitic play in this sentence. Whether ‘pass by’ or ‘spend time’ is the more appropriate here is not critical. Instead, it is the syntax and the discourse pattern that is most important for the present purposes.

THE USE OF TEMPORAL INDICATORS IN CONTEXTS
PROVIDING NONTEMPORAL INFORMATION

The examples from the Classic inscriptions have shown the enclitic *-ijiiy~iiy* used on verbs and time-period nouns to aid the flow of the narrative while indicating the direction of the temporal difference between two events. It orders them into anterior and posterior by virtue of its basic “in the past” meaning. This was already noticed in practical terms by proponents of the AEI-ADI interpretation. However, it did not adequately account for the use of the AEI in many passages not involving distance numbers. Some of these are examined next.

Supplementary Identifying Information

Figure 9.8 contains a passage in which the temporal deictic enclitic *-ijiiy~iiy* is used on a verb in a sentence that supplies additional information about a person mentioned in the previous sentence.

ti ho' ix huklaju'n uniiw chubkaj aj k'an usiiy b'uk tuun ajaw ub'aak itzamnaaj b'alam utz'akb'u[j] uto'k' upakal joy b'alam uchukiyy etz'nab' [suutz']

On 5 Ix 17 *Uniiw* he was captured, Yellow Vulture, a Scattered Stone Lord, the prisoner of *Itzamnaaj* Jaguar; he maintained (‘governed’) the flint and shield of Encircling Jaguar; **he captured Flint [Bat]**.¹⁵⁵

The purpose of the last sentence is to identify the person by connecting him to an act or event that is generally known or had already been presented in another text. Indeed, the capture to which it refers was reported on the stairs below this lintel (see Figure 9.12). The nominal referent of the dependent pronoun, the ruler *Joy B'alam*, ‘Encircling Jaguar’ in the previous sentence, is not in doubt. This sentence recalls an earlier event to add information about previous activities performed by the referent, here most likely for identification purposes.

A similar discourse pattern is also found in the *PMP*:

hain aHau paxbolonacha acathanihi ayan uxtul uppenelob pachimalahix ukaba don luis paxua ukaba uppenel hainix bane pudzihi (AGI 1614: 156.28-30)

This king, Paxbolonacha, whom I have already mentioned, had three sons. He [one of them] was named Pachimalahix. His son was named Don Luis Paxua. This one **fled**.

While the highlighted verb in the Acalan-Chontal passage is intransitive and on the Yaxchilan lintel transitive, both clauses add information concerning the just-named individual. In the *pudzihi* sentence, the absolutive dependent pronoun $\emptyset$ points to the referent *Don Luis Paxua*, while in the *uchukiyy* clause, it is the ergative dependent pronoun

155. In more free-flowing English prose, one might translate the highlighted part as ‘He is the one who captured Flint Bat’. However, this might give the impression that Classic Ch’olan used a relative pronoun here, which is definitely not the case.

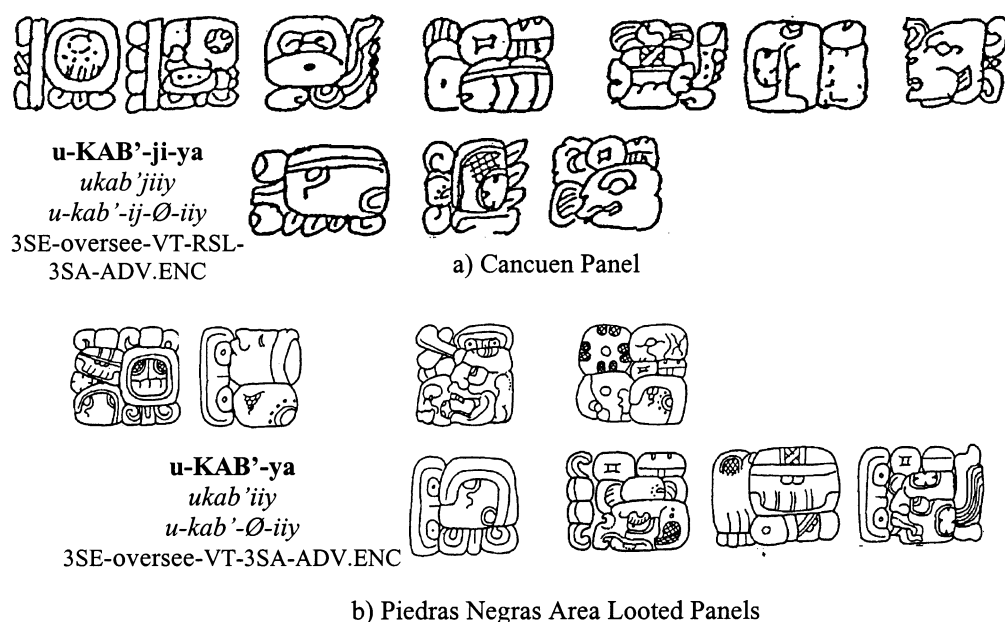


Figure 9.9. The temporal deictic enclitic *-iiy* attached to verbs in sentences supplying information about an event just reported. Drawings by Linda Schele (Schele and Grube 1994: 116, 131).

marker *u-* that does the same for *Joy B'alam*. They both use the temporal deictic enclitic to indicate that an event used to identify a person happened in the past, was known by the narrator, and was presumed to be known by the reader before its appearance in the current narrative. Both clauses mention a previous event in the person's life and use the same narrative method to link the person just mentioned to that earlier event. For the Yaxchilan example, the information is recorded on the stairway below this lintel. For the *PMP* example, it is earlier in the same text.¹⁵⁶ There are other examples of this discourse pattern in the *PMP*.¹⁵⁷

156. Here is that passage from the *PMP*:

pudzi don luis tu pixan chuil maria magdalena tu 22 ukinil u julio acathani. (AGI 1614: 167.9–11; Smailus 1975: 96.2–3)

Don Luis fled during the feast of Saint Mary Magdalen on the 22nd day of the month of July. I have already mentioned it.

Just as in the later passage, the same verb occurs here with the *-i* suffix marking intransitive-completive inflection. The later *pudzihi* example with the enclitic attached, represents a step out of the current narrative timeline to refer to past knowledge assumed to be part of the reader's repertoire. The temporal deictic enclitic does not occur on the verb *pudzi* here because it is simply reporting a completed event.

157. Another intransitive verb that is used in a similar context in the *PMP* is *bix* meaning 'to go' or 'to travel'. Two of its 32 occurrences include the enclitic *-ihi~-i*. This is one of them:

cayx uchaakcel cab tukab diego de aranda ma cuuil yithocob mach ymach uyaki cab tuba bixi-Hix campech (AGI 1614: 166.2–4)

Both Smailus and Scholes and Roys ignore this verb completely in their translations of this passage.

Entonces se volvió a dar el pueblo a Diego de Aranda en encomienda (en la mano). Yo no sé quien de ellos dio el pueblo en encomienda a Campeche (Smailus 1975: 88.1–3).

Afterwards the town was given *en encomienda* to Diego de Aranda. We do not know who put these pueblos under the jurisdiction of Campeche (Scholes and Roys 1968: 396).

Information about Ultimate Agent or Overseer of Event

The examples we have just examined illustrate the role of the past deictic enclitic in sentences supplying additional information about specific individuals mentioned in previous passages. There are several similar examples from the Classic inscriptions that employ it when referring to a previous event rather than to a particular person or thing. A very common verbal compound used in this way is *ukab'jiy*, sometimes *ukab'iy*, examples of which can be seen in Figures 9.4, 9.5, and 9.9. The relevant part of Figure 9.5 reads as follows:

ipas(?) b'olon chuwe'n b'olon uniiw mahkaj ixik (na?) naman ajaw ukab'jiy (Ruler 2)
chan winikhaab' ajaw k'uh(ul) yokib' ajaw.

and then it dawned 9 *Chuwe'n* 9 *Uniiw* [when] Lady *Naman* Lord was betrothed. He oversaw it, “Ruler 2” the four-score years Lord, the holy “Piedras Negras” Lord.

In context, *ukab'jiy* refers back to an event just mentioned in the narrative.¹⁵⁸ In the example from Figure 9.5, that event is the Lady from *Man* being betrothed to Yo'nal Ahk, Ruler 3 of Piedras Negras. It is that event, *mahkaj na naman ajaw*, that is the referent of the absolutive person marker -Ø in the word *ukab'jiy*. The person overseeing the event is Yo'nal Ahk's father, Ruler 2 of Piedras Negras. In Figure 9.4 it is Ruler 2's headdress being adorned *nahwaj unuk ukojaw* that a representative of the Calakmul ruler oversaw. In Figure 9.9a, it is also a representative from Calakmul who oversaw the ‘seating in reign’ *chumwan ti ajawle(l)* of the ruler of Cancuen.

In Figures 9.4, 9.5, and 9.9a, *ukab'jiy* is a derived transitive verb. MacLeod (this volume) has argued convincingly that this form is inflected as a “perfect,” which I prefer to call a “resultative.”¹⁵⁹ In Figure 9.9b, it is not inflected as a resultative. In all of these examples, the ergative dependent pronoun proclitic *u-* serves as the pronominal subject and

Perhaps they did not translate it because they did not recognize the significance of the enclitics here and how they fit in with the rest of the passage. In this example, they not only ignored the effect of *-ihi* but also that of *-ix*. In some cases, leaving out such verbs does not critically change the basic meanings of the passages because they are often used to fill in additional or background information. Leaving it out here led to a different interpretation of the second sentence. I translate the passage more literally as follows:

It began, the second giving of the town into the hand of Diego de Aranda. I do not know who among them was the one who gave the town to him. **He traveled to Campeche.**

A more colloquial translation that better expresses the meaning in English is ‘**He** was the one who **traveled to Campeche**’. It is not Campeche into whose hands (*en encomienda*) the town was given. It was Diego de Aranda in both the first and second sentences. What the author “do[es] not know” is who had the duty to go to Campeche to turn the town over to Diego de Aranda. Although the narrator does not know that person's identity, he assumes the intended readers already knew that a trip to Campeche was necessary to accomplish the turnover.

158. Stephen Houston and David Stuart (personal communication) have recently offered a promising source for the underlying verb, *chab'i*, a transitive verb attested in Tzotzil meaning ‘to govern, guard, oversee’ (see Laughlin and Haviland 1988: 184). In the inscriptions, this compound is most often written with the T526 KAB'AN glyph, which in several contexts interchanges with the syllables *ka-b'a* indicating *ukab'*, instead of *uchab'*, leading to my transcription of *ukab'jiy* for this compound. It should also be noted that the word for ‘land, earth, soil’ in the colonial and current Ch'olan languages is *kab'* rather than *chab'*. This word has an initial /k/ rather than /ch/ because it was likely borrowed into Ch'olan after the split from Greater Tzeltalan. Kaufman and Norman (1984: 122) also reconstruct **kab'* for proto-Ch'olan. A summary of this glyph's decipherment prior to 1994 can be found in Schele and Grube (1994: 17a–18).



Palenque Temple 18
Door Jambs

u-ti-ya
u[h]tiy
uht-Ø-Ø-iiy
happen-IV-3SA-
ADV.ENC

Figure 9.10. The temporal deictic enclitic *-iiy* in an *uhtiy* sentence giving the location of the previous event. Drawing by Linda Schele (1988: 89).

points to the nominal subject, which follows the verb. In most sentences with transitive verbs, the nominal direct objects intervene between the nominal subjects and the verbs. Here the direct objects and referents of the pronominal direct object, the absolutive *-Ø*, are the previous events and so they precede even the current sentence.

Taken in their discursive context, *ukab'jiy* sentences such as these focus directly on the event just reported and provide additional information about it. They inform the readers as to who oversaw or governed a particular event. In doing so, they share an important characteristic with many sentences that add temporal information. They refer back to something mentioned earlier in the text. After reporting the original event, the writer and reader have moved on to the next position in the narrative. Because the *ukab'jiy* sentence occurs later and refers to an earlier passage, the temporal deictic enclitic *-ijiy~-iiy* is often attached to the verb to indicate this narrative back-reference. It points to narrative or discourse time, not extranarrative event time.

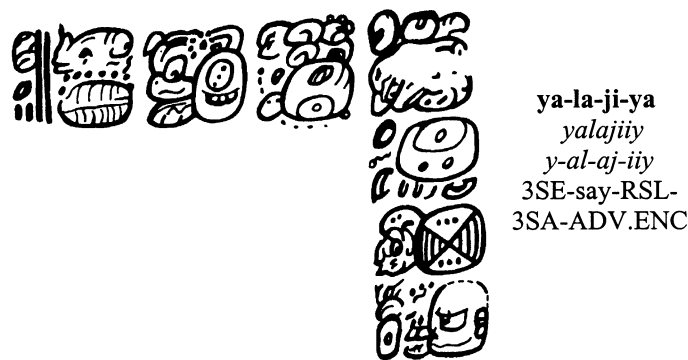
Locative Information

Besides its discursive role with distance numbers, *uhtiy* plays another common one in which it provides information about where an action took place, as in Figure 9.10.

b'olon ik' chum sak ajawin (ajawni?) hemnal ixik muwan mat yitaaj ju'n na kin-u'w uhtiy matawiil

On 9 *Ik'* the seating of *Sak*, she became lord, the valley-place Lady *Muwan Mat*. She accompanied her, the first Lady *Kinu'w*. It happened at *Matawiil*.

159. I prefer the term “resultative” and Haviland (1988: 92), “stative,” since in Tzotzil and Tzeltal it reflects the result of an action, is not a participle, and is easily translated as a perfect only when certain auxiliaries or temporal adverbs are present.



"Hummingbird Vase"
Tikal Burial 196

Figure 9.11. The temporal deictic enclitic *-iiy* used when adding information about a quoted statement. Drawing from Culbert (1993: fig. 84).

*Uhti*y incorporates an absolutive pronoun that is its subject, although it is unmarked (-Ø) in the third-person singular. The dependent pronoun's referent is a previous event or group of events; in this passage, the accession of Lady *Muwan Mat* and her being accompanied by Lady *Kinu'w*, the ancient counterpart of the mother of the current ruler, *Ahku'l Mo' Naabb'*. The information the *uhti*y sentence adds is where the event took place. This reference back in the text represents a break in the progression of narrative time to add an additional piece of information. The deictic enclitic *-ijiiy~-iiy* serves to indicate not that the referenced event itself is earlier in calendric time but only that it is earlier in discourse time, that is, earlier than the time at which the current sentence is being written or read. It shares this characteristic with the *ukab'jiiy* examples and differs from the earlier example of *uhti*y (Figure 9.4), which is accompanied by distance numbers and involves extra-textual, calendric time.

Information about Direct Discourse

Another uncommon but significant use of the temporal deictic enclitic *-ijiiy~-iiy* occurs in statements following direct discourse. The transcription and translation of the direct quote in Figure 9.11, the first four glyph blocks, are not yet completely clear. Still, the appearance of the second-person ergative person marker in the third glyph block (*awich-nal* 'in front of you, with you') strengthens the impression already given by the scene painted on the vase (not shown here). The following statement removes the doubt: *yala-jiiy tz'unun ti itzamnaaj* 'He said it, hummingbird to *Itzamnaaj*'.

First, the actual words of the speaker, the hummingbird, are quoted. Then, there is a discursive break to comment on the quote. The absolutive pronoun (-Ø), which if not null would be attached to the verb after the inflective suffix (*-aj<-aaj*), points back to the direct quote of the hummingbird. This motivates the presence of the enclitic *-iiy* on the verb because of the look back at what was said before the discursive break and perhaps also because the speech itself obviously took place before the commentary on it. The resultative suffix provides the nontemporal inflection (see MacLeod's "perfect," this volume, and Haviland's 1988: 92 "stative" for "being in the state" of having said it).

DISTANT PAST

In the passages cited up to now, the temporal deictic enclitics *-ihi~-i* and *-ijiiy~-iiy* have been attached to verbal compounds whose pronominal clitics referenced events, people, places, and things mentioned earlier in the narrative or assumed to be generally known to the scribes and their audiences.¹⁶⁰ In all of these contexts, the temporal enclitics served as a directional indicator for discourse external or internal time, namely “in the past” or “anterior.” As such, they made it easier for the reader to comprehend the temporal relationships between both extranarrative and discourse internal events. There is another context in which this directional quality seems to be lacking although the same enclitics are employed. Instead, the common element in these texts appears to be the considerable temporal distance between the time the text was written and the time the event took place. While it is often evident from the rest of the narrative that the reported event occurred in the distant past, it is the presence of the temporal deictic enclitic itself that confirms this distance.

Distant Past in the PMP

Compare the following two passages both containing the verb *bix*, one with and one without the temporal deictic enclitic:

Hain xach me ahau yuual bixi ta chactemal (AGI 1614: 156.14; Smailus 1975: 30. 9)
Now, this one was king then [when] **he traveled (went away)** to *Chactemal*.

bixihiix abi paxbolonacha ahau (AGI 1614: 160.20; Smailus 1975: 53.6)
He traveled (went away), it is said, the king Paxbolonacha.

In the first example, the verb for the event, the king’s going away to Chactemal, takes only the completive aspect status marker *-i*. In the second, the verb takes the completive status marker but has the deictic clitics *-ihi* and *-ix* attached as well.¹⁶¹ Although both report completed events, the use of the *-ihi* and the *-ix* enclitics separates the event from the current time. Other than these clitics, only the presence of the word *abi*, ‘it is said’, differentiates them. *Abi* also serves to indicate that someone other than the current writer, often an unknown and indefinite other, was the originator of the information upon which the report is based. As such, it is often used for reports that have been passed down over relatively long periods of time because these are the events that usually cannot be corroborated by eyewitnesses.¹⁶²

160. Although I have given no examples here, these references can be and are also accomplished by means of independent pronouns in both the Classic Ch’olan and PMP texts.

161. As argued later, the two *i*’s here provide strong evidence for the presence of both temporal deictic enclitics even though they are often merged in similar compounds.

162. *Abi* is often present when one or both of the two clitics are used in the context of a distant-past sentence. This is the case, for example, in AGI (1614: 156.19, 160.20, 160.30, 164.20); Smailus (1975: 32.1, 53.6, 55.6–7, 79.4); and elsewhere. But *abi* can also occur when the clitic is not present, for example in AGI (1614: 155.18, 157.30, 162.4 Smailus (1975: 25.9, 39.3, 63.6) and elsewhere. So, although *abi* can cue distance of the event from the narrator or from the current point in the timeline, it operates independently of the temporal deictic enclitics. Its presence is a useful tool for the translation because without such a word, it is difficult to express in English what is supplied by the temporal deictic enclitic *-ihi~-i* in distant-past contexts. Its meaning and connotation in such contexts in Acalan Chontal are, however, quite clear.

The next passage from the *PMP* shows that the past deictic enclitic can indicate distant past without another indicator. It is also the first example provided in this study of its use with a positional verb in the Acalan-Chontal document:

*chumwanihix ta ahaulel paxtun uch'ochocal uppenel paxbolonacha tanix upectzil utakya yithoc yoça ha padreob **cahix** utuclabel upetelob aHauel baob yithoc belcah bixic uça-canob padre ta canpech **cahix** utalel ahau paxtun - yithoc ucuchulob uçacan padre ya ta canpech* (AGI 1614: 163.26–31; Smailus 1975: 74.1–75.2)

He was seated in reign (in the kingship), Paxtun, the younger brother of the son of Paxbolonacha. During it [his reign] was their news and their preaching along with being made to enter the water by the Fathers (priests). **It began** the consulting of all the lords with the people about going to seek out the Fathers in Campeche. **It began** the going of the lord Paxtun with his seated ones (his council) to seek out the Fathers in Campeche.

The main verbs in this passage (in bold) have a temporal deictic enclitic attached. The first verb, *chumwanihix*, includes both *-ihi* and *-ix* and the second two just *-ix*. There is no explicit reference from the current to a previous point in the narrative timeline nor to previously known history. Rather, the focus is on events of a long time ago. The accession of Paxtun took place in about 1550. This section of the *PMP* was originally written in about 1610 (see Scholes and Roys 1968: 360–63; Smailus 1975: 14). This passage is also very important for the claim to legitimacy by the author as the rightful heir to the leadership of the Acalan-Chontal people; “to establish the hereditary rights of Martin Maldonado, his son . . . and to support his own claim to a grant of *encomienda*” (Scholes and Roys 1968: 292). So, it would have been important to emphasize the length of time between the actual events and their documentation. Just as important may be that this whole section “appears to be based very largely on oral tradition” (Scholes and Roys 1968: 363), which is a type of report for which the temporal deictic enclitics *-ihi*~*-i* and *-ix* are often used.

Distant Past in the Classic Inscriptions

The temporal deictic clitic *-ijiiy*~*-iiy* is also used in distant-past contexts in the Classic period inscriptions. One of them is in the passage from Yaxchilan in Figure 9.12, which contains more information about the ancestor alluded to in Figure 9.8.

*ti chan men(?) ux te' mak **chubkjiy** etz'nab' suutz' k'an tok luk xukalan ajaw yehte' ch'a-jo'm joy b'alam k'uh(ul) ? chan ajaw*

On 4 Men(?) 3 Mak, he was captured, Flint Bat, Yellow ??, “*Lakanha*” Lord. It was the work of the scatterer? Encircling Jaguar, holy “Yaxchilan” Lord.

This passage is followed by two others telling of captures by *Itzamnaaj B'alam*, the first of which is over 150 years later. The verb compound in the first passage includes the enclitic *-iiy*. Those in the later passages do not. For this scribe, the earlier time may be viewed almost as a different age or at least as a time not directly experienced. Among other triggers, such an implied shift to a different time frame can prompt the use of the temporal deictic enclitic.

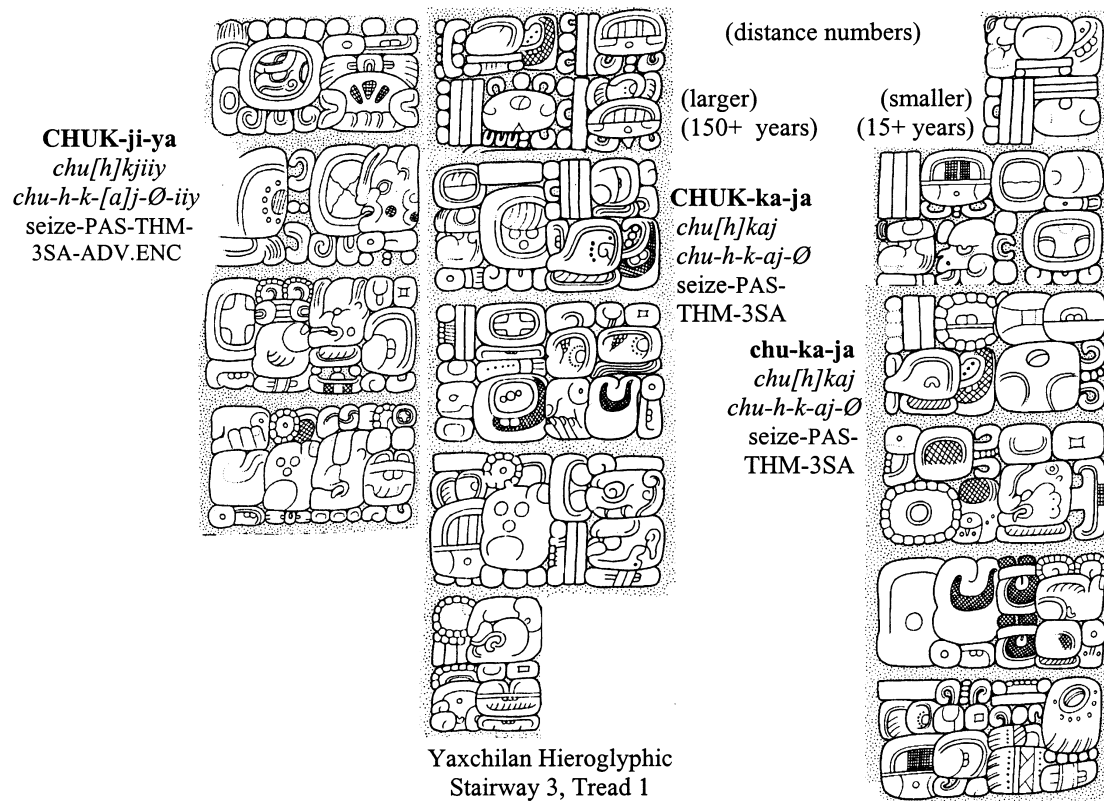


Figure 9.12. A passage illustrating the use of the temporal deictic enclitic *-ijiy~iyy* to indicate that an event occurred in the distant past. Drawing by Ian Graham (1982: 166).

It is easier to predict when the enclitic *-ijiy~iyy* will be attached to verbs in referential clauses than in distant-past contexts. In referential contexts, it is the back-reference itself and not the amount of elapsed time or the author's relationship to the information that promotes the enclitic's presence. In distant-past contexts, syntax is not a major factor. Instead, it is the whole primary narrative timeline that shifts to the distant past. The narrator is often using a temporal measurement external to or only implicit in the narrative.

If it is true that pronominal reference is not involved in distant-past contexts, how can it be that deixis is involved at all? Is it not true that the very concept of deixis involves at least two positions, with the pointing originating from one position and signaling or moving toward another? The answer is that there is still a deictic function here, but the point of origin is both external to the narrative and not explicitly acknowledged within it. This usage in distant past contexts is related to a feature of deixis mentioned by Schiffrrin (1987: 322–23):

Deictic elements define the **deictic center** of an utterance, i.e. the locus from which speaker, hearer, time, and place coordinates are fixed, and are thus assigned a context-specific interpretation. In unmarked cases, the deictic center is the speaker, such that person, time, and place are defined in relationship to the speaker's identity, the time during which the utterance is presented, and the location of the speaker.

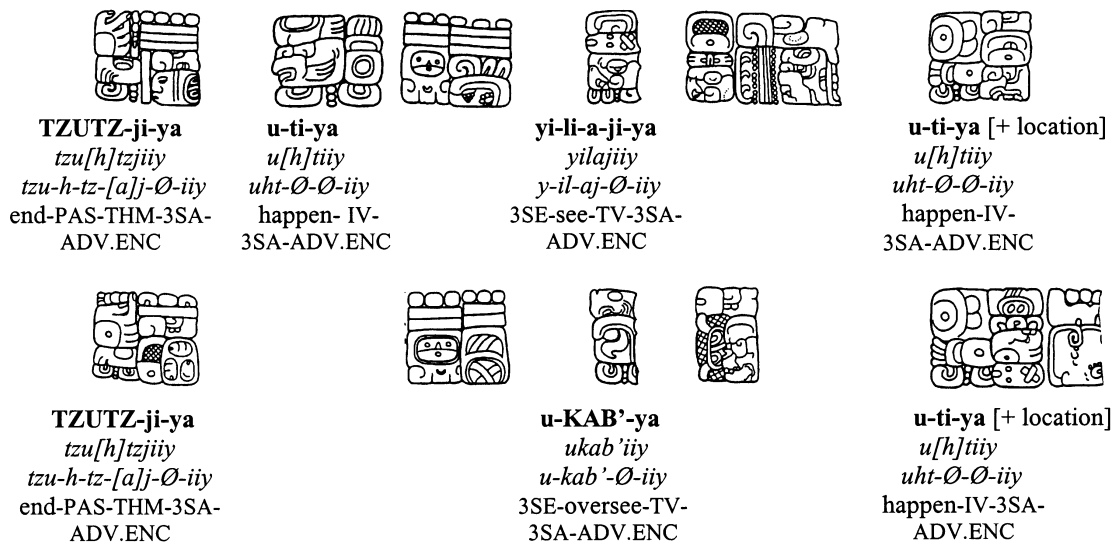


Figure 9.13. Parallel passages on Quirigua Stela E that use the temporal deictic enclitic -jiiy~iyy when narrating an event in the very distant past. Drawing by Matthew Looper (1995: 362).

In distant-past contexts, the deictic center or point of origin is unmarked. There is no specific marking other than the enclitic itself to set up the deictic relationship. The distance number alone is not enough since the earlier events are not usually marked by the enclitic in their first recounting. But when one realizes that the scribe or the commissioner is the “deictic center” in relation to whom time is defined, the usage of the past enclitic is both justified and imbued with meaning. Since the requirement is not syntactic, a great amount of latitude is allowed in determining the size of the required shift in time that makes use of the temporal deictic enclitic appropriate. In fact, the criteria may have as much to do with motive and purpose as with any abstract temporal measurement. In the Acalan-Chontal passages, recalling critical events from sixty years ago was time enough for its application. In the passage from Yaxchilan Hieroglyphic Stairway 3, the first capture by *Itzamnaaj B'alam*, over fifteen years before the second, was not far enough in the past, but the capture 150 years earlier by *Joy B'alam* was. The passage from Quirigua Stela E in Figure 9.13 reaches back even deeper into the so-called mythological past.

We have seen the major functional differences between the referential and distant-past usages of the past deictic enclitic. There are major differences in their implications as well. The referential examples are more interesting for grasping the grammar and narrative style employed by the scribes. Understanding how the pronominal and temporal enclitics function is necessary for a basic grasp of the author's message and for appreciating the literary skill that produced it. Still, the distant-past usage is determined not by a grammatical rule but by the intent and viewpoint of the narrator. Because of this, it could even provide additional insight into the historical, religious, and ideological strategies of the commissioners and authors.

Identity and Forms of the Temporal Deictic Enclitic

FORMS OF THE ENCLITIC

Figures 9.4 through 9.7 all show passages in which *-ijiiy~iiy* is attached both to verbs and to parts of the distance numbers. They all illustrate the compound **WINIK-ji-ya** *winikjiy*. Figures 9.5 and 9.7 also include **HAAB'-ya** *haab'iiy*. Figure 9.6 shows an alternative and less common pattern **WINIK-ya** *winikiiy* and **HAAB'-ji-ya** *haab'jiy* with the two attested forms switched between the two time periods. The appearance of the enclitic on time-period nouns often corresponds directly with the appearance of the enclitic on the verb in the same or in an adjacent sentence. The contextual and formal evidence is very strong that this is not a different suffix or enclitic from that which is attached to both time periods. Although the evidence indicates that either the short or the long form is favored in certain compounds or in certain classes of compounds, there is a lot of variation for which an accounting must be given. The alternative forms appear too frequently to be considered rare. To merely dismiss numerous counter examples as irrelevant, bizarre, suppletive, or irregular when alternative explanations would account for them, could be taken as a certain looseness or lack of empirical rigor which I try here to avoid.

Although they do not use the same terminology, Kaufman and Norman (1984: 115, 138, 145) reconstruct the long form of the proto-Ch'olan past deictic enclitic **-iji* as consisting of two parts **-ij* and **-i* as indicated in Table 9.2. The first of this pair is the future (and neutral) temporal deictic enclitic and the second is the short form of the past enclitic. Although they do not comment in detail on the choices, they reserve the long form of the past enclitic for numbers and the short form for other words. The merits of their reconstruction will not be weighed here. Since the focus of this study is not on a protolanguage but rather on the actual texts written in certain languages, the attempt here is simply to ascertain what variation is encountered in the related languages and what that might tell us about evaluating forms encountered in specific texts. There seems to be a substantial amount of evidence that actual usage was much less stringent and categoric in practice than a protolanguage analysis might imply.

Fox and Justeson (1984: 59) note that variation in usage of the compound versus the simple form of the past enclitic is evidenced in Yukatekan, Tzeltalan, and Ch'olan. They believe that this variation "is ancient, if not proto-Mayan." Only Ch'olan sources are considered here, but they alone contain substantial evidence attesting to the antiquity of this variation.

-ij as 'Day,' Pro and Con

The future or neutral enclitic and the *-ij* portion of the long form of the past enclitic have long been translated as 'day' in this context as is implied in Kaufman and Norman's reconstructions and as is stated emphatically by Robertson, Houston, and Stuart (this volume). There is little doubt that when it is attached to numbers, the context clearly calls for pointing to a specified number of days in the past or the future. We have already seen how this works with the past enclitic in several *winik* examples. There are fewer examples of the bare future/neutral *-ij* enclitic attached to numbers in the Classic inscriptions. One clear example of *chab'i* written just as in Ch'ol and Ch'orti' occurs with the meaning 'two

TABLE 9.2. Reconstructions of the Future/Neutral and Past Temporal Deictic Enclitics (after Kaufman and Norman 1984: 115, 138, 145)

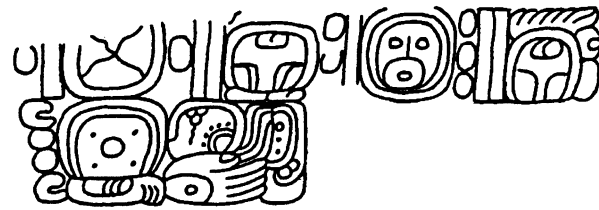
Proto-Ch'olan	Proto-Mayan	Tzeltalan	
Future			
* <i>chab'-ij</i>	pM * <i>ka'b'-eej</i>	Tz * <i>cha'b'-ej</i>	['two days from now']
* <i>ux-ij</i>	pM * <i>oox-eej</i>	Tz * <i>ox-ey</i>	['three days from now']
* <i>chun-ij</i>	pM * <i>kooñ-eej</i>	Tz * <i>chon-ey</i>	['four days from now']
Past			
* <i>ak'b'-i</i>		Tz * <i>abk'ab'-ey</i>	['yesterday']
* <i>chab'-ij-i</i>	pM * <i>ka'b'-ej-eer</i>	Tz * <i>cha(')b'-j-ey</i>	['two days ago']
* <i>chuu-ij-i</i>	pM * <i>kooñ-ey-eer</i>	Tz * <i>chon j-ey</i>	['four days ago']
* <i>on-i</i>	pM * <i>ooñ-eer</i>	cf. Tzo <i>wo'ne</i>	['a long time ago']
* <i>sahm-i</i>			['earlier today']
* <i>ux-ij-i</i>	pM * <i>oox-ey-eer</i>	Tz * <i>ox j-ey</i>	['three days ago']

days in the future' at Tortuguero, as shown in Figure 9.14. The passage could be transcribed as *wak etz'nab' b'uluch kase'w chab'i k'ahlaj tuun waxak ajaw uxlaju'n kase'w*, and translated as 'on six *etz'nab'* eleven *tzek* it was two days before the stone was tied on eight *ajaw* thirteen *tzek*.'¹⁶³

163. This passage has become a hot topic of discussion since I translated the verb here as completive in a short summary of my views on the enclitics (Wald and MacLeod 1999). John Robertson (personal communication) and Robertson et al. (1999a) have instead interpreted this passage as proof that the form *k'ahlaj* must be "incompletive" or "present" (Robertson, Houston, and Stuart, this volume). I view this passage as very much in the Palenque style with the two dates playing off against each other in the same sentence. It states that the first date is two days before the event that took place on the second. This is important because the first is the date of Jaguar Lord's death and the second is the date of the stone tying. So the sentence points out that the date of his death was two days before the stone was tied on the period ending. That interpretation is bolstered by the following sentence: *mah ilaaj b'alam ajaw*, that is, 'he, Jaguar Lord, did not witness it'. As is usually the case with similar positive forms of this verb, the previous date relates directly to a different event and not immediately to the seeing or witnessing. It is the whole dated event that is then referred to by the pronoun that accompanies the *il* verb.

However, the whole interpretation would change if the context were altered. If the two dates were left out or if the first date was connected with *k'ahlaj* and the second with *mah ilaaj*, the aspectual or tense interpretation would change as well. This became the subject of a rather long interrogative session in March 1999 in which Lucas López, a Ch'orti' speaker, was questioned in a Texas Maya Meetings group as to which aspect would be used in such an example. When taken out of context and left with only *chab'i* and a verb, he often did express it using the incompletive aspect. His responses were then interpreted by some as proof that the incompletive (now "present") was the appropriate interpretation in this Classic period passage and that this form of the passive had therefore to be incompletive ("present") wherever it occurred.

This conclusion is troubling for a number of reasons. First, after this session, Lucas López stated that he hoped he had given the questioners what they wanted but was afraid he had not. Since he was himself knowledgeable concerning grammar, he stated that he had not been given enough context to really decide whether the incompletive or completive aspect was more appropriate. Second, to my question during the group session as to which aspect would be used in a statement reporting an event such as a death on a specific date, he replied unequivocally that it would be completive. Yet, although such passages are ubiquitous in the hieroglyphic texts, it was not considered by some to be evidence that these forms were more likely to be completive than incompletive. Third, although this is not the place to present corroborating

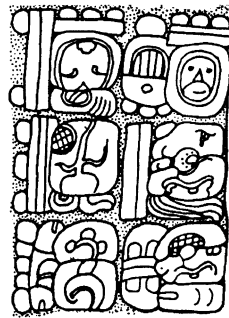


CHA'-b'i-ji
chab'ij
cha-b'-ij
 two-EP(?) -ADV.ENC

Tortuguero Box

Figure 9.14. The temporal deictic clitic *-ij* (or *-iij*) indicating 'before' or 'time in the future'. Drawing by MatthewLooper (1991: 2).

WAXAK WINIK-ji
waxak winik[i]j
waxak winik-ij
 eight (ADJ)-score (N)-
 ADV.ENC



Palenque Temple of the Sun Tablet

Figure 9.15. The temporal deictic enclitic *-ij* (or *-iij*) attached to a time-period glyph to indicate a forward-pointing distance number. Drawing by Linda Schele (1987: 86).

The noncompounded neutral/future enclitic *-ij* is, as in Figure 9.15, most commonly found on the 20-day period *winik* glyph in the Classic inscriptions. This passage can be transcribed as *lajchan* [*k'in*] *waxak winikij ju'n haab' uxlaju'n ajaw waxak laju'n uniiw laju'n tuun hub'uy ta okte'le[l]*; '12 days, 8 months, and 1 year before 13 Ajaw 18 K'an^{k'in}, the 10th *tuun*, he was brought down into the office of lineage pillar(?)'. The distance number provides the length of time before the 10-*tuun* period-ending that *Kan B'alam*'s designation as *okte'lel* occurred. Since the temporal standpoint of the narrator is the time of the *hub'uy* event, the *laju'ntuun* ending is situated in the future.

There are a few occurrences of the *-ij* enclitic, glyphic *Ci-ji* or *ji*, that do not seem to contextually support an "in the future" meaning. One of these is on Nimli Punit Stela 21, where it appears in a long count (Stuart and Grube 2000: 2). Since neither the future nor the past seems to be implied by the context, such examples could be used to argue that *-ij* is itself a word meaning 'day'. Still, by themselves, these examples do not provide definite proof. The opposing view is that *-ij* alone can serve as a neutral, nondirectional reference to time and is best analyzed in that way. The future is then implied by the specific context.

evidence, it is abundantly clear to me that tense and/or aspect in the verbal system of modern Ch'orti' is quite different from that of the Classic Ch'olan texts. Even the latest views of Robertson, Houston, and Stuart (this volume) are that it is quite different, that is, an "aspectual system" versus a "tense system." So the relevance of the aspect used in modern Ch'orti' to the tense supposedly used in the Classic texts would have to be proved, not assumed as a given.

Possible Lexical Sources for 'Day'

There are certain problems that arise from an interpretation that assigns the meaning 'day' to *-ij*. One of them concerns the attribution of that meaning unqualified by the contexts in which it occurs. If *-ij* is indeed grammatically a noun rather than an adverb, one would not expect it to be an enclitic. Clitics are usually not nouns but rather pronouns, articles, adverbs, verb contractions, and so on. Stoll (1888: 55) relates it to the Poqomchi' word *q'ij* 'day.' Fox and Justeson (1984: 58-59) note that linguists have been reticent about adopting this analysis. Because of sound changes that would have affected both that word and the enclitics we are discussing, too many borrowings would have had to have occurred to make that etymology likely.¹⁶⁴

Another possible candidate is *eww*. Reflexes of this word mean 'yesterday' in most of the Highland Mayan languages. It also appears in the Classic Ch'olan script in the form (h)e-wa (or e?-wa) where it seems instead to have the meaning 'day' since it occurs quite often as such in distance numbers. Still, this is also not a good candidate. First, the presence of *eww* (or *e'w*, see Lacadena and Wichmann, this volume) along with *-iiij* as 'day' would mean that it would not reflect the Ch'olan /e/>/i/ sound change. Most likely, it would have had to have been borrowed into Ch'olan after the change. Second, since it is already present as *eww*, it is less likely that it would also exist as *iiij* or *ij* at the same time with the same meaning. Third, there is no clear evidence in the highland languages that this word occurs with a final /j/ instead of /w/ in that meaning.

A similar problem exists with regard to the day name *eb'*. Although there is evidence for the form '*ee*' as the day name in K'ichee', this is likely to be a reflex of the name *eb'*. If indeed, as Campbell (1988: 375) indicates, the name was *eb'* in Ch'ol as well, the same sound change problems are present if one attempts to link *-iiij* with it, although retaining that form as a day name would be easier to accept. Still, being a day name is quite different from being a word with the meaning 'day'.

Contextual 'Day' Meaning without an Enclitic

One might hypothesize that the enclitic *-ij/-iiij* means 'day' and that is why it appears on time periods with a numerical meaning such as *winik*. There are empirical problems with this line of reasoning. The appearance of the enclitic *-ij* on *winik* is not common except as part of the compound *-ijiiy*. There are even fewer examples of it occurring when an "in-the-future" meaning is not indicated. There are more occurrences of **WINIK** with only a **ki** phonetic complement and still more with no glyphic suffix at all. Finally, although the long form of the past enclitic (*-ijiiy*) is used with *winik* more often than the short form (*-iiy*), the short form also occurs in similar contexts. But if *-ij-* were necessary

164. That would make this etymology for the future deictic enclitic even more questionable since the equivalent word in the Ch'olan and Yucatekan languages is *k'in* with the final *n* preserved from proto-Mayan *ñ*. Since it was the Eastern Highland languages that underwent the change from *ñ* to *-j*, the Western Mayan languages would have had to borrow this **-iiij/*-eej* back again with essentially the same meaning while preserving *k'in* in that meaning as well. That scenario seems highly unlikely. It is also noteworthy that it is Ch'olan that has changed the form from proto-Mayan **-ej-eer* and Tzeltalan and Yucatekan **-ej-eej* to **ij-iiy*. This makes any proposed relationship of the future deictic enclitic *-ij* to Eastern Mayan *q'ij* extremely unlikely. But without a word such as *q'ij* to lean on for the meaning 'day', such a proposal for the future deictic enclitic remains purely speculative.

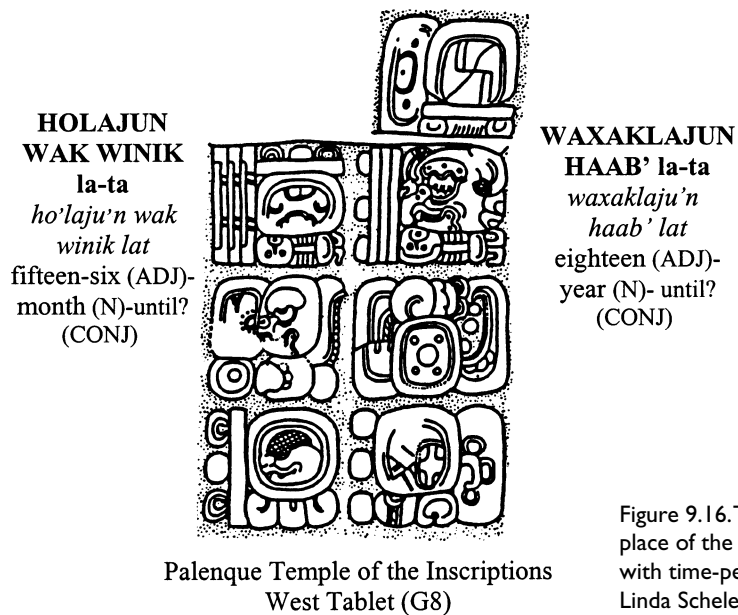


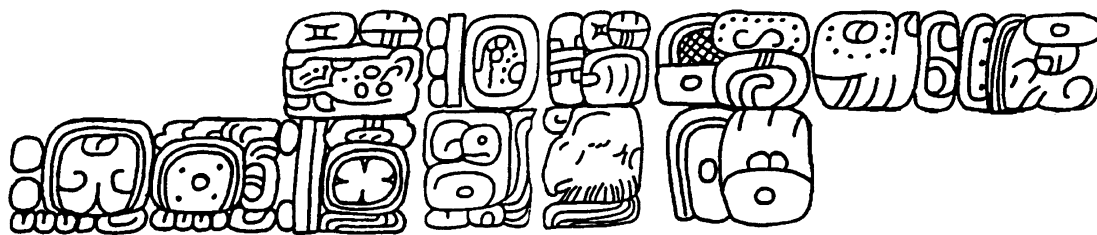
Figure 9.16. The conjunction *lat* used in place of the past temporal deictic enclitic with time-period nouns. Drawing by Linda Schele (1986: 59).

to provide the meaning ‘day’, the short form would make no sense in this context. All of this evidence indicates that **WINIK** can mean 20 days or a 20-day period without the addition of an enclitic that means ‘day’.

In a similar vein, there are numerals referring clearly to a number of days in the past that do not include the *-ij* enclitic. Instead, they have the compound enclitic *-ixiiy* attached. This may be a precursor to the co-occurrence of these two enclitics on words in the *PMP* albeit in a different order. These are the compounds *ho'bixiiy* (for example, Palenque, Tablet of 96 Glyphs) and *hukuxiiy* (for example, Palenque Temple of the Cross Tablet). Although these compounds occur only on the numbers 5 and 7, they are numerals. Unless it can be shown that *-ix* somehow means ‘day’, they occur in days-in-the-past context without a specific word for ‘day’. They mean ‘5 or 7 days ago’ even though *-ij* is not present.

Even more common are numerals in the day position of distance numbers that have no enclitics or suffixes attached at all. These occur in both back-reference (past) and forward-reference (future) contexts. The large number of these occurrences make it clear that numerals without enclitics or suffixes can mean a specified number of days in the Classic Ch’olan inscriptions. This implies that whether *-ij* means ‘day’ independently of the context, there is nothing in that context that would actually require it to be a word with that meaning.

Another word that occurs with quite some frequency in the same contexts as *-ijiiy*–*iiy* is *lat*, an example of which can be seen in Figure 9.16. It appears in distance numbers on time-period nouns and also on bare numbers indicating days between two events with the next event being later in time. Judging from the context, this passage could be translated ‘Its count was 15 days, 6 months, and 18 years after he acceded as *kalo'mte*’ and then he died on 6 *Chikchan* 3 *Pohp*’. It may be related to Yucatek *latulah*, *lata mukut*, and *lata pak*’ (Barrera Vásquez 1980: 440), which all have the meaning ‘*hasta, hasta que*’ in



OCH-b'i-ji-ji-ya

och b'ijjiy

och b'i[h][a]j-Ø-ijiy

enter-IV-road-3SA-

ADV.ENC

Tortuguero Box

Figure 9.17. An example of the past deictic enclitic *-ijiy* written explicitly in its long form. Drawing by Matthew Looper (1991: 2).

various contexts. Especially in various passages where it refers to a certain number of days (for example, Piedras Negras Lintel 3), the translation ‘until’ fits very well. Again, we seem to have a word used after a number in similar contexts as the past enclitic referring to days with no specific word for ‘day’ present at all.

Enclitic Compounds Including -ij but without ‘Day’ Connotations

We have just examined words and phrases in which neither *-ij* nor any other morphemes meaning ‘day’ were present, but the meaning ‘day’ was nevertheless implicit. There are other instances in both the hieroglyphic inscriptions and in the colonial and modern descendants of the Classic Ch’olan language that include *-ij*, but do not imply the meaning ‘day’. The most common of these in the inscriptions is *haab’jiy*, one example of which can be seen in Figure 9.6. It is very unlikely that anyone writing this compound could have thought the meaning ‘day’ for *-ij* to be appropriate when used with a numbered time period of 360 days. A much less specific meaning of ‘time in the past’ rather than ‘days in the past’ is more likely.

Although the short form of the adverb *-iij* is by far the most common in the Classic inscriptions, there are two texts that do contain several examples of the long form attached to verbs. Figure 9.17 illustrates one of them.¹⁶⁵ This example is especially interesting since the word *b’ih* for ‘road’ to which the suffix is immediately attached does not otherwise require an *i* suffix. The scribe could have simply added T126 *ya* to *b’i-hi-* to indicate the presence of the enclitic as, for example, on Site Q Panel 2 (not shown here). It is interesting that this compound begins with *bij-* instead of the expected *bih-*. That is because the length of the whole word likely caused the unpossessed form *bihaj-* to contract to *bij-*.¹⁶⁶ Such contraction is common with the long and short forms of the enclitic as can be seen for example on *winikjiy* and on passives such as *chuhkjiy*. While the *-j-* of the thematic suffix *-aj* remains on the compound passive, the *-a-* elides because the stress shifts to the last syllable of the now lengthy word. The compound ends with the *-ijiy* enclitic attached resulting in *cha’ winikjiy och b’ijjiy b’alam ajaw*, ‘it was two months af-

165. The appearance of the temporal deictic clitic in its full form on the Tortuguero box was brought to my attention by Alfonso Lacadena (personal communication, 1997).

166. Refer to Houston et al. (2001: 42–46) for a detailed explanation of how such nouns function in several Mayan languages.

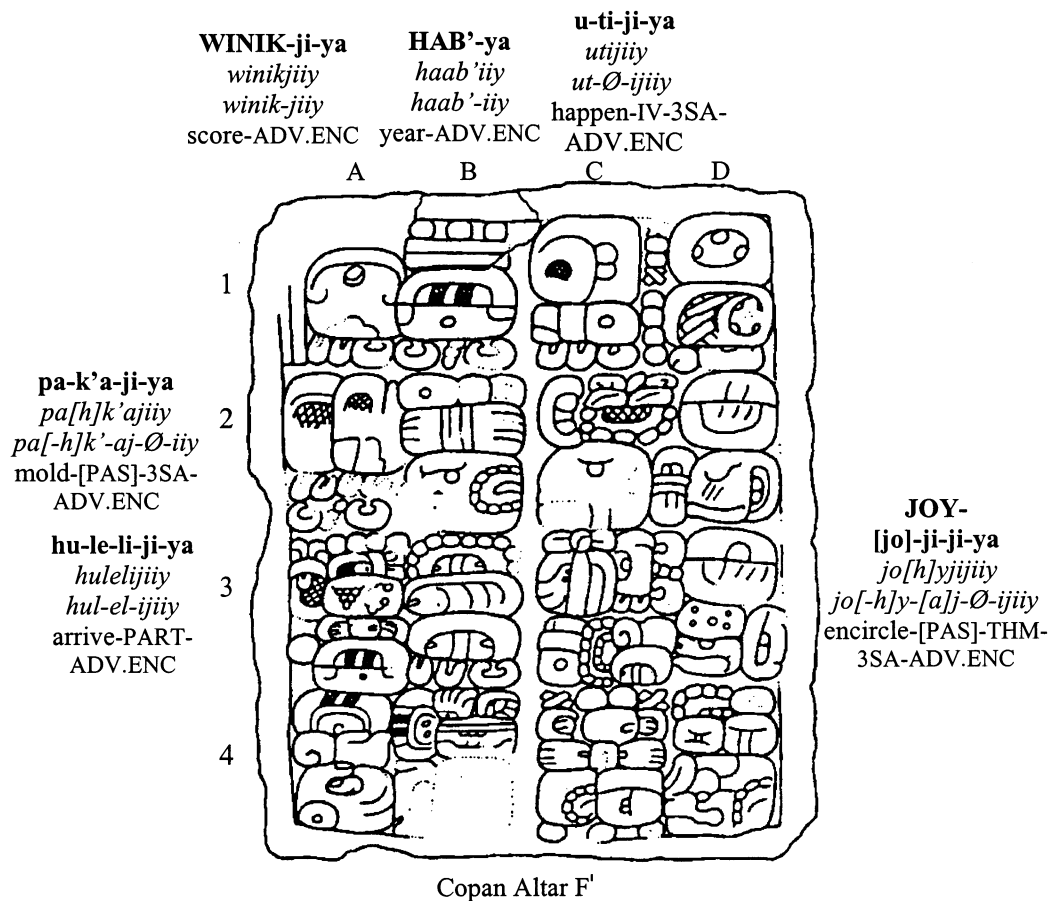


Figure 9.18. Multiple examples of the temporal deictic enclitic *-ijiiy~-iyy*. Drawing by Barbara Fash (Schele 1993: 2).

ter Jaguar Lord road-entered . . . ?'. Since the second glyphic *ji* would serve no purpose as phonetic complementation to a syllabically written word, its function as an additional syllable is quite unavoidable.¹⁶⁷ In this example, the past enclitic form *-ijiiy* is the most likely interpretation with opposing views carrying the burden to prove otherwise. This Maya scribe, realizing that *-ijiiy* and *-iyy* were two forms of basically the same adverb, did not write a bizarre and inexplicable word, but one that makes perfect sense assuming one approaches it with the correct analysis.

The second text, Copan Altar F' shown in Figure 9.18, contains several words that have the enclitic *-ijiiy~-iyy* attached.¹⁶⁸ Three of them include the enclitic written explicitly

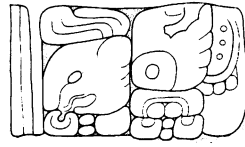
167. Even if one interpreted T585 as a logogram, it would be B'IH with a final glottal /h/. The *ji* in question would have to be the phonetic complement to B'IH-*ji* writing *b'ihaj-* with the *-a-* elided and the final laryngeal /j/ remaining. Since a phonetic complement to a syllabic glyph would not make sense, the second *ji* could not be interpreted as one in this view either, and the argument would still stand.

168. The letters (A–D) and numbers (1–4) used here correspond with those used by Schele (1993: 1) in Copan note 111. However, using A–D for the columns instead of A–B should not be construed as an invitation to read this text as if it were written in two double columns. Instead row 1 is to be read straight across from A to D before continuing on to row 2.

HO'LAJU'N-ni-ji-ya*ho'la ju'ni ji iy**ho'la ju'n-ji iy*

fifteen (ADJ)-

ADV.ENC.



Yaxchilan Lintel 29

Figure 9.19. A compound containing the long form of the past temporal deictic enclitic attached to a number. Drawing by Ian Graham (1979: 67).

in its long form on compounds other than numbers. Following the second distance number at A3, the scribe wrote *hulelijiiy johyjiiy ti k'uhul nal*, ‘. . . since, having arrived, he (or ‘it’, the *Chaak* statue or ‘god pot’) was enclosed (or ‘encircled’) in the holy place [and then . . .]’. Although other possibilities theoretically exist, *hulel* is here best interpreted as the participial form of the intransitive verb *hul* ‘to arrive’. Because there is no reason for verbal inflection on a participle in this context, the first *i* in *-jiiy* serves only the purpose of providing the first vowel of the temporal deictic enclitic.¹⁶⁹

Johyjiiy at C3 is a combination of the passive form of the verb and the enclitic.¹⁷⁰ At A2 is a passive compound *pa-k'a-ji-ya* > *pahk'ajiiy* that is written with the usual shorter form of the enclitic.¹⁷¹ These two compounds do not express different basic forms but simply two slightly different ways of writing a passive verb with the enclitic *-jiiy*~*-iiy* attached.

A third verbal compound with the past enclitic occurs at C1 in this text. It represents a very important exception to the normal pattern for writing root intransitive verbs with the past deictic enclitic attached. This verb *uht* almost always takes the short form *-iiy*, and is usually written glyphically as *u-ti-ya* > *uhtiiy*. Here, in a variation very demonstrative for our purposes, the compound is written syllabically *u-ti-ji-ya*.¹⁷² The enclitic is rep-

169. Barbara MacLeod (personal communication, 1997) first suggested this argument to me in connection with another participial form on a different inscription. With regard to this particular passage, MacLeod in 1989 saw the similarity between the “suffix” on this verb and “that found on proto-Ch’olan *chäb’-ij-i.” At the time she thought that meant that this “verb is bound to the DN in a ‘days (or k’atuns, tuns) ago’ sense” (MacLeod 1989a: 4).

170. The reading of **JOY** instead of **JOK** for this logogram was suggested by David Stuart (personal communication, 1997) based especially on the evidence from Yaxchilan Lintel 26.

171. If one considers logographically rather than syllabically written forms paradigmatic, one could elide the *-a-* of the *-aj* thematic suffix and transcribe it as *pahk'jiiy* instead. If syllabic examples are paradigmatic, one could add an *-a-* to produce *joyajjiiy*. I have avoided this issue here by simply transcribing each as they appear glyphically. One could also argue that the *-j-* in *pahk'jiiy* could belong to the enclitic as it does on *winikjiiy*. However, since the inflected verb already ends in *-j*, this could not be easily proved and Occam’s razor would prevail. Also, the approach taken by the Tortuguero scribe when writing *och bijjiiy* in shortening *-haj* to *-j* in a syllabic collocation seems to favor eliding the vowel in such compounds.

172. Although this example of the enclitic is important, it is by no means true that I base “a broad grammatical theory” “on this inscription” (see Robertson, Houston and Stuart, this volume). Instead, I first conceived the hypothesis based on the similar discourse patterns and the formal similarity of the relevant morphemes in the *PMP* and the Classic Ch’olan inscriptions. Since then I have become convinced of its basic correctness for many reasons, including the results of a study of the progression of the Maya verbal system from proposed proto-Mayan origins up through the current Ch’olan languages. When I first presented an earlier version of the ideas presented here, this inscription was not even included. Instead, I was told by one of the scholars that he would believe my theory if I could just present him with one example of *u-ti-ji-ya*. I did precisely that, but unfortunately still could not change his mind. It was reassuring to know, however, that this and several other pieces of empirical evidence not yet recognized at the time but predictable or possible based on this theory were later identified.

resented here in its full form as *-ijiiy*.¹⁷³ It indicates the temporal direction of the earlier event referred to by the absolutive pronoun. This example provides additional evidence that the *-iiy* attachments to *uht* elsewhere indeed represent the past deictic enclitic since they are contextually identical in all relevant details to this one which employs the long form of the enclitic.¹⁷⁴

When the occurrences of the enclitic in this text are considered along with that from the Tortuguero box in Figure 9.17 and the examples of numbers such as that in Figure 9.19, we are confronted with the long form of the past deictic enclitic written in a variety of compounds. *Ho'laju'nijiiy* provides us with one of several examples of the long form of the enclitic on numerical adjectives, *hulelijiiy* on participles (nominalized verbs), *joyjijiiy* on passives, *och b'ijijiiy* on intransitives with incorporated nouns, and *utijiiy* on root intransitives. Because the last four examples are verbal compounds, it would be hard to justify the *-ij* portion of this compound enclitic as having the meaning 'day' in these contexts. Still, this should not serve as an excuse for glibly dismissing them as bizarre. It also does not seem likely that they were "mistakes" or mere scribal license. As an unbiased epigrapher, one must first approach a text with the premise that the texts were written by scribes who were fully aware of what they were writing. Only in the face of overwhelming evidence should it be concluded that they made errors in particular instances. In this case, one would have to assume multiple errors in one inscription and a similar error in another. But if one takes my hypothesis into account, one that I formulated without the benefit of these inscriptions, they are not errors at all. In fact, they appear instead to be compounds written by scribes who, one might say, were also good "grammarians" and "etymologists" who realized that *-ijiiy* and *-iiy* are two different forms of the same adverb attached to many different types of words. Whether this usage entails a reinterpretation of a compound form is not the most important issue here. More important is the presence of undeniable examples of this usage on verbs in Classic Ch'olan by a native speaker, whatever the underlying analytical justification. Simply not liking what the scribes wrote based on a competing hypothesis does not justify declaring its illegitimacy. Instead, these and other examples show that at least some elite, knowledgeable, literate scribes did not interpret the *-ij* portion of the *-ijiiy* enclitic to always imply the literal meaning 'day'.

That these two forms *-ijiiy* and *-iiy* still coincided with their reflexes on verbs in a direct descendant of Classic Ch'olan, Acalan Chontal, simply reinforces the legitimacy of the Classic scribes' analysis. The presence in the *PMP* of the *-ihi* enclitic on diverse verbs as exemplified in compounds such as these with the intransitive verbs *numihi*, *pudzih*, *talihix*, and *bixihix*; with the positional *chumvanihix*; and with the derived transitives

173. The first *i* could theoretically be the result of a merger between a reconstructed *-i* root intransitive status marker and the *i-* of the clitic. However, that *-i* is often missing when root intransitives are written with a logogram.

174. Although I agree for the most part with MacLeod's explanation of the transitive perfect (although calling it instead a "resultative" or "stative"), I do not believe that it was used with any intransitive verbs in the Classic inscriptions. The resultative suffix for intransitive verbs was instead *-om*, a conclusion I reached together with Michael Carrasco (see Wald n.d.a).

acadzibih and *acathanihi* represents a continuation of this particular analysis and usage into colonial times.¹⁷⁵ In none of these cases does *-ij-* seem to even connote ‘day’.

Onihi is another compound in the *PMP* that employs the long form of the past enclitic and one of the growing number of occurrences that has to be discarded by those favoring a strict ‘day’ approach to interpreting the *-ij-* of *-ijiiy* (or *-ihi*). Similar forms are evident in some of the other languages that descended from Classic Ch’olan after the tumultuous and momentous breakup that occurred near the end of the ninth and beginning of the tenth century A.D. Table 9.3 does not contain a complete listing of forms but only shows some variants that, for the most part, do not match the reconstructions in the first column.¹⁷⁶ While *onih* from Acalan Chontal could be interpreted as ‘many days’, it is nevertheless commonly documented in the form *oni* in modern Chontal. The longer compound is troublesome for some since, according to their interpretation, *oni* means long ago. But both of these forms occur in the same context, and admitting the legitimacy of both might lead to an admission that the ‘day’ connotation is present with or without *-ij-*. Ch’ol provides another variant of *onih* in which the intervocalic /h/ has shifted to /y/, an attested variation for other morphemes as well in the Ch’olan languages. Finally, the Ch’orti’ version *oni’ix* may have only added the glottal stop because of the attachment of *-ix* to *oni*, but is important for demonstrating that in Ch’orti’, as in other Ch’olan languages, the enclitic *-ix* is not at all restricted to recent past as suggested by Robertson, Houston, and Stuart (this volume), but instead usually moves the past even further back.

The reconstructed compound *äk’b’i* also admits of at least one exception. As shown in Table 9.3, Morán (1935b) writes this compound as *acbihi*. Those who opine that the first part of the compound enclitic *-ihi* must mean ‘day’ would have to explain how ‘day’ makes sense here. Also, if one suggests that *onih* involves a “loss” of the “morpheme boundary,” thereby becoming a “simple marker” (Robertson, Houston, Stuart, this volume), why not simply accept that as a possible hypothesis to explain what this and numerous other occurrences on all types of word classes indicate rather than begrudging their existence despite actual examples?

‘Day’ Meaning with Numbers but without *-ij*

Surprisingly, there is even more variability in the Ch’olan languages among compounds of the enclitic with numbers. If it is so obvious that *-ij* is needed for the meaning

175. Again, while I agree with MacLeod on the presence of the *-VVj* resultative (“perfect”) in Classic Ch’olan, it was no longer present in seventeenth-century Acalan Chontal, 700 years after the collapse of the kingdoms in the Central Lowland area. In Acalan, only an *-em* suffix (perhaps a reflex of Classic Ch’olan intransitive resultative *-om*) is left. An example of this in the *PMP* can be found in *buthem* (*but’em*) ‘filled’ (AGI 1614: 161.29–30; Smailus 1975: 62.3). Instead of functioning as would Tzeltalan resultatives, the *-ihi* enclitic is present on verbs only in back-reference and distant-past contexts. One must also keep in mind that the shape of the resultatives is not generally *-ij* at all but rather, as MacLeod points out, *-VVj*, except in those cases where a specific verb requires *-ijj*. That the glyph used in writing the classic resultative form is *ji* is not relevant to the alphabetic system of the *PMP* except insofar as both use the consonant /j/.

176. It is in that light that Table 9.3 is meant to be interpreted and not as an attempt to explain or demonstrate the basic or even most common forms in any of the Ch’olan languages. Instead, it is to be taken as a condensed form of *parôle* merely illustrating certain attested forms. As such, it gives an indication of actual variation from the commonly reconstructed forms and evidence of their widespread existence. This in turn should increase the plausibility of their ancient origins.

TABLE 9.3. Raw Data Hinting at Variations from Reconstructed Forms of the Temporal Deictic Enclitic *-iji~i* (*ihĩ~i*) among and within Colonial and Modern Ch'olan Languages.

Proto-Ch'olan	Translation	Language and Source	Ch'olan Variants
* <i>äk'b'-i</i>	'yesterday'	Ch'olti' [1625] (Morán 1935b)	<i>acbihi</i>
* <i>chäb'-ij-i</i>	'day before yesterday'	Ch'olti' [1625] (Morán 1935b)	<i>chacbihi</i>
			<i>chahbi</i>
		Tila Ch'ol [Sapper 1907]*	<i>chubhi</i>
		Tumbala Ch'ol [Sapper 1907]*	<i>chubibi</i>
		Ch'ol [Berendt ca. 1850]*	<i>chöji</i> 'antier' ('the day before yesterday')
		Ch'orti' (Wisdom 1950b)	<i>cha'ak'bi</i>
* <i>ux-ij-i</i>	"three days ago"	Ch'orti' (Pérez Mendoza et al. 1996)	<i>chab'i</i>
		Chontal (Knowles 1988)	<i>chäbi</i>
* <i>ux-ij-i</i>	"three days ago"	Chontal (Knowles 1988)	<i>ʔushäbi</i>
		Ch'orti' (Wisdom 1950b)	<i>uxi'</i>
* <i>chun-ij-i</i>	'four days ago'	Ch'orti' (Wisdom 1950b)	<i>cha'ani'</i>
* <i>on-i</i>	'long ago'	Tumbala Ch'ol (Feldman 1986)	<i>oniyii</i>
		Tumbala Ch'ol [Rau ca. 1900]*	<i>ouiyix</i> 'antes' ('earlier')
		Ch'ol (Aulie and Aulie 1978)	<i>oniyi</i>
		Tila Ch'ol (Warkentin and Scott 1980)	<i>oniyix</i>
		Ch'orti' (Wisdom 1950b)	<i>oni</i> 'earlier', 'previous'
			<i>oni'ix</i> 'long ago'
		Acalan Chontal 1610 (Smailus 1975)	<i>oni</i> 'many years ago' (dict.)
			<i>onibi</i> 'many years ago' (text)

*Sources in brackets and followed by an asterisk appear as edited in Josserand and Hopkins (1988a–c).

'day', why is there so much evidence for a shorter version of the enclitic in compounds referring to a specific number of days in the past? Morán (1935b) provides the matching form *chacbihi* for the **chäb'-ij-i* proto-Ch'olan reconstruction, but he also provides the alternate form *chahbi*.¹⁷⁷ Similar to Morán, Wisdom (1950b) has *cha'ak'bi* for 'the day before yesterday', a compound that likely combines *cha* 'two', *ak'ab* 'night', and *-i* (or *-ibi*) 'in the past'. But there is also evidence within Ch'orti' for a more traditional short form in Pérez Martínez et al.'s (1994) *chab'i*. There is, then, evidence throughout the whole language family that both the longer and the shorter forms could be used for the same numeral-enclitic compound without any difference in meaning. But there is more.

As a class, clitics tend not to "interact with word-internal structure" (Kanerva 1987: 89), but they can in certain circumstances, most often by means of "phonological rules"

177. It is possible that Morán's longer compound is made up of *cha* 'two,' *ak'ab* 'night,' and *-ibi* 'in the past.' This, however, does not affect the point being made here.

(Kanerva 1987: 77). We can see an example of the effect of enclitics on their hosts in the Chontal and Ch'ol compounds meaning the 'day-before-yesterday' and 'day-after-tomorrow'. Feldman (1986: 44) and Aulie and Aulie (1972: 46) list *chabi* as the Tumbala Ch'ol word for 'day after tomorrow'. The future/neutral deictic enclitic has here lost its final *j*, but the host word itself has remained unchanged. The past enclitic has, however, affected the root of the 'day-before-yesterday' compound and it is a phonological one based on length and stress. Because the final syllables of Mayan words, including compounds, are stressed, and perhaps because this compound is three syllables long instead of two, the root vowel has become shortened to *ä* in *chäbihi*.

Chontal has progressed one step further in this process. The 'day after tomorrow' in Chontal is the same as in Ch'ol, that is, *chabi* (Knowles 1988). But Chontal has also shortened the past deictic enclitic to *-i* instead of *-ihi*, a process of syncope and merger that is also understandable especially in commonly used words. But before this shortening of the longer form, it had already shortened the root vowel of the host word to *ä* as also happened in Ch'ol. The result is *chäbi* for the 'day before yesterday'. So the only way to distinguish between these two words with opposite meaning in Chontal is by the length of the root vowel. The historical impetus for the difference between the two related enclitics is no longer evident in this word pair at all. These historical changes seem to be driven by phonological forces in which an understanding of *-ij* as a morpheme meaning 'day' seems to play no role at all.

The variation among these two related enclitics within the Ch'olan language family and even within each language itself implies that Fox and Justeson (1984) are correct in their judgment that these alternate forms have existed side by side over a very long period of time. That is why we have been able to find them in the Classic Ch'olan texts as well. Whether *-ij* actually has the literal meaning 'day' outside of specific contexts, there are so many examples throughout the history of the Ch'olan languages of the 'day' connotation in the temporal enclitics without *-ij* and so many with *-ij* present and no literal 'day' meaning, that broad conclusions ruling out the legitimacy of either in actual language usage are not justified.

THE FORMS OF THE PAST TEMPORAL DEICTIC ENCLITIC IN ACALAN CHONTAL

Smailus's Interpretation of the Enclitic

The interpretation of the temporal deictic enclitic *-ihi~-i* provided so far has been supported by contextual arguments and by comparison with its uses in both current and colonial Ch'olan languages. Although this analysis best explains the pattern of verbal compounds found in the *PMP*, the past temporal deictic enclitic has not been recognized as such on verbs in any of the detailed studies of the document. Several examples of how Smailus and Scholes and Roys (1968) have ignored or mistranslated verbs with the *-ihi~-i* enclitic attached have already been presented. This situation may have been created by their misidentification of the relevant morpheme as detailed in the following description by Smailus (1975: 203).

El sufijo demostrativo expresa que el sujeto de la acción ejecutada en la posición 4, o la acción misma, ya ha sido mencionada. Este sufijo se puede traducir, en el caso de hacerlo, como 'este mismo'.

Ejemplo: 155:31 *bolonlamat terminos uthanceli* ‘Bolonlamat, el cual se llama Terminos’
 156:3 *acathanihi* ‘... como yo *ya* dije’

The demonstrative suffix indicates that the subject of the action executed in position 4, or the action itself, has already been mentioned. This suffix can be translated, in case one does so at all, as ‘this very one’.

Example: 155:31 *bolonlamat termino uthanceli* ‘Nine Lamat, the one called Terminos’
 156:3 *acathanihi* ‘... I have *already* said it’

While Smailus’s translation of these two passages agrees with that given here, his interpretation of the role the enclitic *-ihi~-i* plays in them does not. He does not interpret it as an indication of a temporal difference between the referent of the dependent pronoun in the current clause (an earlier portion of the text in this case) and the current position of the narrative or narrator in the timeline. Instead, he seems to interpret it specifically as a demonstrative pronoun equivalent to ‘this’ (‘the latter’) in English. Thus he states that, if it is to be translated at all, it can be rendered as ‘this very one’ (*‘este mismo’*). He calls it a demonstrative suffix that actually creates the referential connection to the previous action rather than an adverbial indicator of the temporal direction of that previous action in the narrative. He also seems to limit the meaning to its usage with this particular verb or verbs with a similar meaning.¹⁷⁸ That he may be doing so is also indicated by his entry for this enclitic in his accompanying lexicon (Smailus 1975: 142):

-hi Sufijo demostrativo:
 ‘esto, lo referido’

-hi demonstrative suffix:
 ‘that; what has been referred to’

We have already seen that the role Smailus assigns to the enclitic *-ihi~-i* in these and its many other occurrences is already being played by the Acalan-Chontal person markers. Here it is the third-person-singular unmarked or null absolute. In passages such as these with *acathanihi*, the null person marker indicates *what* is referred to while the deictic enclitic *-ihi* indicates the referent’s *relative temporal position* compared to the current standpoint of the writer or reader in the narrative or compared to an event later in time.

Although the temporal deictic enclitic *-ihi~-i* is used very often with verbs that refer explicitly to earlier passages in the document, a number of the other occurrences already examined would not fit Smailus’s definition. Perhaps that is partly the reason why he ignores this enclitic in his translation of some of those other passages and may have prompted the occasional omission of some of the verb compounds themselves from the translation. Scholes and Roys before him also did the same. This particular verb, *than*, with its *-ihi* enclitic and first-person-singular form provides a distinctive parenthetical expression that comes in the form of the Chontal authors’ explicit references to the text they

178. There is one instance of a similar verb, also a derived transitive, that has a similar meaning:
 ... *uppenel alamatazel acadzibih* (AGI 1614: 157.2–3; Smailus 1975: 34.7–35.1)
 ... a son of Alamatazel. I have already written about him.

have already written. They refer to themselves as authors in the first person. First-person references, much less first-person references to themselves by scribes, are rare in the Classic period inscriptions. It is possible that the near absence of such references in the inscriptions, the analyses and translation of the *-ihi* enclitic such as provided by Smailus, and the supplanting of the *-ihi* enclitic by the *-ix* enclitic in Chontal and the other Ch'olan languages have made it more difficult to recognize the parallel usage of this deictic enclitic on verbs in the Classic period texts.

Contrasting Homophonic Suffixes in the PMP

Besides misinterpreting the past deictic enclitic in Acalan Chontal as a demonstrative pronoun, there is also a danger of certain similar suffixes being misinterpreted as the past deictic enclitic. An obvious one is the completive suffix *-i* used for most verbs in the *PMP* as, for example, on the verb *bixi* (AGI 1614: 162.11–12; Smailus 1975: 65.1–2):

yuual bixi paxbolonacha ahau tu hunppel cah ukaba tachacan.
then he went, the king Paxbolonacha, to the town named Tachakan.

The *-i* suffix on *bixi* is not historically related to the enclitic but more likely to the proto-Mayan plain status marker for intransitive verbs. Whatever its etymological source, Acalan Chontal uses the *-i* suffix to indicate completive status on a broad range of verb classes and does not limit it to intransitives. Although it is identical in form to the short version of the past deictic enclitic in Acalan Chontal, it is clearly a separate and different morpheme. The length of the completive suffix is, historically speaking, short. Even without taking the long form of the enclitic itself into account, its final *-i* is, from an etymological standpoint, long. This difference in length is not marked in the *PMP* and was probably no longer present in the spoken language either by that time. Regardless of how obvious the functional difference between the *-i* of the completive status marker and the *-i* of the past deictic enclitic may seem, their formal identity should be seen as a warning not to confuse the short form of the past temporal deictic enclitic with other possible *i* homophones that have different meanings, usages, and etymologies.

Another morpheme that is phonetically similar to the short form of the past deictic enclitic in the *PMP* is the demonstrative pronoun *-i*. It means ‘this’ or ‘this one’ and refers to something close to the speaker similar to its English equivalent. It is the counterpart of *-ay--a* ‘that’ or ‘that one’ referring to something farther away from the speaker (AGI 1614: 160.13–14; Smailus 1975: 52.1–2):

coco xach col numicon cilan cab upeteli.
Now, I only desire [that] I pass by [that] I see **this** whole land.

A more colloquial translation might be, ‘Now then, I only want to pass through to see **this** whole land again’. In this and several other passages, it is clearly the demonstrative pronoun ‘this’ and not the past temporal deictic enclitic that is embodied in the *-i* suffix.¹⁷⁹ It is perhaps noteworthy that although Smailus incorrectly identified the temporal deictic

179. A few of these other passages are AGI 1614: 155.15, 160.9, 162.19, 168.38; Smailus (1975: 25.5, 50.7, 66.3, 103.5). The occurrence of a final *-i* on words in these and other passages like them should

enclitic *-ihi~-i* as a demonstrative pronoun, he never equated it with this particular demonstrative pronoun. What is more, when the temporal deictic enclitic is properly understood as an adverb indicating temporal direction, it becomes quite clear that this is quite different from a demonstrative pronoun that is one side of a ‘this’ and ‘that’ pair. If *-ihi~-i* were serving that purpose, it would conflict with the information provided by the dependent pronouns in referential contexts. Instead, this particular demonstrative pronoun *-i* might be related to the demonstrative pronoun *hain*, which also occurs in the PMP and in the Classic inscriptions as *hai*, meaning ‘this one’.

Strong evidence that this homophone is not related to the short form of the past deictic enclitic comes from Yukatek. The enclitic meaning ‘this’ in Acalan Chontal is likely related directly to the enclitic *-i* in Yukatek with the same meaning (see Martínez Hernández 1929: 459 and Barrera Vásquez 1980: 261). But if this is true and it was not borrowed from Chontal into Yukatek, this Yukatek enclitic could not come from proto-Mayan *-ej-eer. Yukatek never made the change from /e/ to /i/ as did the Ch’olan languages. The reflexes of *-ej-eer are still present in Yukatek and the vowels in compounds with this past deictic enclitic attached have not undergone a change from *e* to *i*. The Motul Dictionary lists *holhe* for ‘ayer’ and *cab he* for ‘ante ayer’ (Martínez Hernández 1929: 162, 396). The Cordemex Dictionary shows *ho’lhe* for ‘ayer’ along with *ka’bhe* for ‘antier’, *oxhe* for ‘tres días ha’, and so on (Barrera Vásquez 1980: 226). It is quite evident that we are dealing here with two enclitics that are not only different in meaning but also have a totally different etymology.

Finally, there is one other homophone that could be confused with the past deictic enclitic *-ihi~-i*. This is another *-i* enclitic that means ‘there’ and is used often on a noun following the preposition *ta*, as in this example (AGI 1614: 166.27–28; Smailus 1975: 92.9):

uppenel pachimalahiix dzibil ukaba ta chani

he [was] the son of Pachimalahix. His name is written up there (above).

This enclitic occurs often on names of towns that are also preceded by the preposition *ta*.¹⁸⁰ The use of this enclitic is clearly connected with spatial contexts while *-ihi~-i* is always connected with temporal ones. As with the other *-i* enclitic just mentioned, it too exists in Yukatek with the same meaning it has in Acalan Chontal. Martínez Hernández (1929: 459) and Barrera Vásquez (1980: 261) provide ‘*allá, allí, de allí*’ and other similar translations. So all the evidence again points to a proto-Mayan *-i etymology for the Acalan-Chontal reflex in *-i* with the same meaning and function. In both Yukatek and Acalan Chontal, this enclitic means ‘there’ and is etymologically unrelated to the temporal deictic enclitic that has been the focus of this present study.

also not be interpreted as having some sort of nontemporal directional meaning such as ‘here’ or ‘there’ either. This should be clear from looking at the first example from the list, *nadzon Juan Baptista escrivano vi ti cabi* which translated is ‘I, Juan Baptista, scribe here in this town’. There is already a word for ‘here’ in this sentence, *vi*. Neither a repetition of ‘here’ nor a nonsensical ‘there’ would fit. Instead, what he is writing makes perfect sense, that is, ‘here in **this** town’.

180. Some of these other occurrences are AGI (1614: 164.5, 166.2, 167.8) and Smailus (1975: 76.3, 87.8, 95.8).

Variant Spellings of the Past Deictic Enclitic -ihi~-i

The scribes who wrote the *PMP* varied somewhat in their spellings of the completive inflection plus temporal deictic enclitic even on the same compounds. The examples seen earlier in Table 9.1 of *acathanihi*, which occurs ten times in the document, already represent a merger between the *-i* completive inflection and the first *-i* of the enclitic *-ihi*.¹⁸¹ There is another variant *acathaniy* that occurs three times in the *PMP*.¹⁸²

Tali chami doña ysauel acathaniy (AGI 1614: 157.19; Smailus 1975: 37.7)

She came and she died, Doña Isabel. I have already mentioned her.

In these cases, it seems that the /h/ was elided after the merger of the completive inflectional suffix with the first *-i* of the enclitic *-ihi*. The elision of intervocalic *h*'s is an extremely common feature of the Acalan-Chontal script as it is of the spoken Ch'olan languages and of many other languages as well. For example, the word *cabi[i]x* is often written *caix* (as in AGI 1614: 160.32; Smailus 1975: 56.3), although the /h/ is actually part of the original verb root. If this happens in a short compound such as *cahix*, it is even more likely that an /h/ would be elided from a longer compound such as *acathanihi*. The change of the final *-i* to a *-y* is not at all controversial since it likely reflects only a change in orthography and not in pronunciation.

Finally, there are three passages in which this word is written with just one *-i* suffix or enclitic while appearing in similar contexts with apparently the same meaning as all those clearly suffixed by *-ihi*. This is one of them:¹⁸³

... *ta catel diego de aranda acathani* (AGI 1614: 166.4; Smailus 1975: 88.4)

... where he was staying, Diego de Aranda. I have already mentioned him.

There are at least two ways these compounds could be analyzed. One would be to view them as a merger between the *-i* completive inflection and the short form of the enclitic *-i*. The merger of two adjacent *-i*'s in compounds is endemic throughout the *PMP*. It happens regularly, for example on words that have the enclitic *-ix* attached. Only occasionally do such compounds retain two *i*'s in the *PMP* spelling. Another less likely option would be to conclude that the temporal deictic enclitic is not present here at all. Since it is not a verbal derivation or inflection, its presence is not an absolute requirement for the

181. One could decide then to include *-hi* as another variant of the enclitic, but I believe this variation is better explained simply as a product of a merger. It seems to be completely dependent on the presence of a preceding *-i*.

182. Here are the other two in *-iy*:

... *cha hain macuaauay uchatulib acathaniy* (AGI 1614: 162.3; Smailus 1975: 63.5)

... and this Macwaaway who was the second. I have already mentioned him.

... *cha ta yuual xach ubixel padre acathaniy* (AGI 1614: 166.21–22; Smailus 1975: 91.8)

... and then the father was leaving. I have already mentioned him.</>

183. Here are the other two in *-i*:

... *tu 22 ukinil u julio acathani* (AGI 1614: 167.10–11; Smailus 1975: 96.3)

... on the 22nd day of the month July. I have already said it.

francisco maldonado yithoc doña catalina acathani ani uppenelob martin maldonado (AGI 1614: 157.16–17; Smailus 1975: 37.4–5)

Francisco Maldonado joined with [married] Doña Catalina. I have already mentioned her. There was a son, Martin Maldonado.

basic meaning of the sentence to be preserved. The back-reference would still be accomplished as always through the absolutive (Set B) person marker (-Ø). The lack of the *-ihi~-i* enclitic would make the temporal direction of the reference less explicit, but the back-reference itself would still stand.

Evidence for the Long Form -ihi

Demonstrating definitively the long form of the *-ihi* enclitic on verbs in the *PMP* is difficult because the completive inflection for most verb classes is *-i*. Because the temporal deictic enclitic begins with *-i* and the tendency in the *PMP* is to merge two identical vowels, especially two *-i*'s and especially in a long compound, there are no unequivocal examples of the full form attached directly to verbs. In order to reconstruct the full form in these contexts, one must hypothesize a phonetic or graphemic merger of the *-i* inflection with the first *i* of the temporal deictic enclitic. Although I believe this is the correct approach, there is no way to directly demonstrate it based on the available verbal compounds in the *PMP*. Turning to compounds with numbers is also of little value because of the dearth of such examples in the text. However, there is one verbal compound that does provide precisely the information needed for verification. In an early section of the *PMP*, the translator-scribe mentions the person who originally wrote the first part of the text in Nahuatl. He stated about that original author: *chami onibi* 'he died a long time ago' (AGI 1614: 155.7–8; Smailus 1975: 23.10). The various forms of the *on* compound were discussed earlier. Here it is ostensibly appended to the verbal lexeme *chami*, which already includes completive inflection.¹⁸⁴ So the full form of the *-ihi* enclitic is attached to the adjective/adverb *on* meaning 'much' or 'many' to produce the meaning 'a long time ago'.¹⁸⁵ This is then positive evidence for the existence of the long form of the enclitic in Acalan Chontal.

Sources of the h in Compounds with Attached Enclitic

Some of the disagreement concerning the source of the *h* in the compounds we have been examining stems from a time when the enclitic itself was not recognized as such. The

184. Although Smailus considers *chamionibi* to have been written as one word, there is strong textual evidence that it was actually written as two. Most important, the space between the *-i* of *chami* and the *o-* of *onibi* is as wide as that between most words. What is more, in the line on which *chami* begins, there is the string *dzibiltamexico*. It is written without any "word-sized" separation at all between any letters, yet Smailus breaks it into three words "dzibil ta mexico." Perhaps one reason for thinking *chami* and *onibi* should be joined was because *chami* is divided between lines as *cha-mi* and it might not have been divided if it were really only a short word. However, on the very preceding line, an only slightly longer word, *aca-hoche*, was divided at the hyphen boundary indicated although sufficient space remained to complete it on the same line. In both cases, the right margin would have been slightly extended by not hyphenating the word. Considering the evidence from the facsimile, it seems unjustified to join these two words unless some independent linguistic evidence argues strongly for doing so. There is another compound in the document *ahauonihobi* (AGI 155.9; Smailus 1975: 26.2) that may have also influenced his interpretation. Otherwise there is no external evidence that I know of from Chontal or any of the other Ch'olan languages in favor of interpreting *onibi* either as an enclitic or as any type of verbal suffix. In any case, the point being made in the main text is not dependent on this word-boundary decision.

185. To argue that the word or lexeme is really *oni* and that the first *-i* of *-ihi* is elided through a merger is not valid. As is the case with most words in the Ch'olan (and Mayan) languages, *'on* is a CVC root word, while *'oni* is the same word with the short form of the past deictic enclitic attached.

problem then was to justify the presence of the *h* at all even without considering the usual following *i*. There are, to be sure, some cases in which the presence of an *h* from sources other than the enclitic is easily explained. One of these is in the final word of this sentence:

hainix ukal atalon caçacanetlahi (AGI 1614: 164.8–9; Smailus 1975: 77.1)
this [was] the reason I came [and] I looked for you

While the plural form of the second person absolutive pronoun is *-etla*, Kaufman and Norman (1984: 91) have noted that it is derived from *la(j)*, or *la(h)* in the *PMP* orthography. So the *h* in the compound could come from that dependent pronoun form. Otherwise, one would be left with the *i* of the enclitic following immediately the *a* of the pronoun. It may be possible to argue for a process of syncopation and elision leading from the long form *-ihi* to the short form *-i* in this context, but it is perhaps best to let Occam's razor rule.

In the *PMP*, most instances of the temporal deictic enclitic are attached to verbs inflected for completive aspect. This has led in the past to speculation concerning the source of the *h* that appears so often near but not at the end of such verbs. One possibility is that the completive status marker in Acalan Chontal is itself actually *-ih*. This is suggested by Fox and Justeson (1984: 60) when exploring the likely phonetic readings for T125 and T126. They give two reasons for this view. First, citing Bricker (1981), they note that there is evidence of *-ih* being “the third person completive marker on passives and antipassives in Yucatec.” That is probably not directly relevant since it verifies only that such a suffix exists in a different verbal context in a related language. Second, they state that it shows up as *-ih* in colonial Chontal on completive verbs “when followed by a VC postclitic,” giving as an example *chumvanihix*. There are a number of arguments that can be made against this interpretation of the *h*'s presence.

Numerous examples have already been cited in which *-ihi* occurs even when it is not followed by a VC postclitic (in other words, by *-ix*). The presence of the final *-i* in these examples would require an explanation if indeed the completive inflection were *-ih*, unless one recognized the final *-i* as the short form of the *-ihi~-i* enclitic. Of course, one would then also have to conclude that *-ihi~-i* is not present at all on *chumvanihix*. However, there are other examples, such as *bixihiix* (AGI 1614: 160.20; Smailus 1975: 53.6), in which the two *i*'s following the *h* make sense only if both enclitics are present. Following Fox and Justeson's (1984) lead here would still leave one of the *-i*'s unexplained. It has also been established that a particular context, usage, and meaning are present when *-ihi* alone, *-ix* alone, or *-ihi* followed by *-ix* is attached to various verbs. Finally, we have pointed out that, beyond a few spelling exceptions reflecting elision and merger, this particular context, usage, and meaning are not evident when neither of those two enclitics, but rather just the *-i* of the completive, is present on these and on similar verbs.

The shape the morpheme would have to take in particular situations also provides evidence against a proposed *-ih* completive aspect marker. If the *-h* were an integral part of completive inflection, would it not also be present, at least sometimes, when it is the final syllable in the verbal compound? It never is, despite over 200 opportunities for the scribe to write it in this document. But perhaps an argument could be made that this *-h*, supposedly an integral part of the completive aspect marker, would become noticeable only when the *-i* aspect marker is followed in the same word by another morpheme or syllable

TABLE 9.4. Verb Compounds Involving the Completive Aspect Marker *-i* in the *Paxbolon Maldonado Papers*. Each Indented Column Itemizes All the Elements within the Preceding Higher-level Set.

32 occurrences: <i>i</i> aspect marker + V(C(V)) +/- (V)C(V)
32 occurrences: <i>i</i> aspect marker + misc. other suffixes or enclitics
50 occurrences: <i>i</i> aspect marker + <i>i</i> +/- C(<i>i</i>) +/- (<i>i</i>)C (past deictic enclitics)
29 occurrences: <i>i</i> aspect marker + (<i>i</i>) <i>x</i> (past deictic enclitic)
3 occurrences: <i>i</i> aspect marker + <i>y</i> (past deictic enclitic)
18 occurrences: <i>i</i> aspect marker + (<i>i</i>) <i>hi</i> +/- (<i>i</i>) <i>x</i> (past deictic enclitics)
11 occurrences: <i>i</i> aspect marker + (<i>i</i>) <i>hi</i> (past deictic enclitic)
6 occurrences: <i>i</i> aspect marker + (<i>i</i>) <i>hi</i> -(<i>i</i>) <i>x</i> (past deictic enclitics)
1 occurrence: <i>i</i> aspect marker + (<i>i</i>) <i>hi</i> - <i>ix</i> (past deictic enclitics)

beginning with a vowel. As summarized in Table 9.4, there are over 82 opportunities for this *h* to occur preceding a vowel, many of which are the vowel *i*. Even when the aspect marker *-i* precedes what would be another *i* (50 times not including three disputable *acathani* examples), it merges with that *i* instead of inserting an *h* 29 times. These are all compounds with the enclitic *-ix* and so all involve either back-references or distant-past contexts. Another three are the result of a compound with *-ihi~-i* and are back-references as well. That leaves 18 of the 50 that do include an *h* between the *i* vowels and all of them are also in back-reference or distant-past contexts.

So what conclusions should be drawn from this statistical data? Rather than evidence for a completive aspect marker in *-ih*, all indicators point completely in the opposite direction. The *h* is *never* present in nonreferential or nondistant-past contexts following the *-i* aspect marker. That alone makes a strong case that the *h* has something to do with referential and distant-past contexts. In three cases where the temporal deictic enclitic *-i* is explicitly present there is no *h*, probably due to syncope or elision. This means that although the *h* is a sufficient reason for the enclitic's presence in these circumstances, it is not an absolutely necessary one, because the referential context can exist without it. Finally, of the 18 cases in which there is an *h* after the *-i* aspect marker, all of which are in referential and distant-past contexts, seven also include the enclitic *-ix*. However, in most of its occurrences (29 of 36), the *-ix* enclitic is not preceded by an *h* despite the back-referential or distant-past context. That, and the occurrence of *bixihiix* with two *i*'s preceding the final *x*, has led me to conclude that both enclitics *-ihi~-i* and *-ix* are present in cases where *-ihix* is written. In the case of *bixihiix*, the third *i* would otherwise be unmotivated. Finally, the remaining 11 examples with an intervening *h* are in referential or distant-past contexts and they do include the enclitic *-ihi*. I conclude from this that the two *i*'s, that of the aspect marker and the first *i* of the enclitic, merge in all of these cases just as the aspect marker and the *i* of the enclitic *-ix* merge in all but one of the examples.¹⁸⁶ Because there is no evidence for the presence of this supposed *-ih* aspect marker except where the temporal deictic enclitic is expected, I conclude there is no convincing reason for positing it for Acalan Chontal. Instead, the more simple, straightforward, and defensible conclusion is

186. *Cabiix* in AGI (1614: 169.12) and Smailus (1975: 109.6).

that the source of the *h* is the past temporal deictic enclitic *-ihi*. The *h* is there only when the context indicates back-reference or distant past.¹⁸⁷

Precisely the same argument can be used to rule out the *h* in these contexts as being epenthetic, that is, inserted between the two vowels to either separate or bridge the gap between them. If it were simply epenthetical, it should also be present following the completive aspect marker in contexts other than back-reference or distant past. It is also not simply a bridge between the *-i* completive status marker and the enclitic *-ix* since the *h* is also present when the *-ix* enclitic is not, contrary to a statement by Fox and Justeson (1984: 60). Most of the time, 29 times, it is not present between completive inflection and the enclitic *-ix*. It is there with *-ix* seven times. To argue that this *h* is present when completive inflection is followed by the enclitic *-ix* and then only have it occur in less than 20 percent of the cases is not very convincing. It is also present 11 times without the enclitic *-ix*—more times than with it. Again, this points to a cause other than the presence of the enclitic *-ix*. Because the *h* is present in those cases and because two reconstructible adjacent vowels—especially, adjacent *i*'s—do not normally motivate its presence without the back-referential and distant-past contexts, the most straightforward conclusion is that it is part of the past deictic enclitic *-ihi*. That this is a well-documented form of that enclitic elsewhere should, in fact, make it the most likely candidate for its source. That an epenthetic *h* would occur only in back-reference and distant-past contexts where another perfectly reasonable explanation for its presence exists and be absent more times than not in otherwise supposedly equally motivated circumstances should cause epenthesis to be rejected as the motivation for its presence.

The Fragile Nature of /h/ and /j/

As an aspirant, the consonant /h/ is one of the weakest in all languages. Although the /h/ here is not glottal but rather laryngeal and so less volatile diachronically, it nevertheless shares to some degree that weakness. That may be partly responsible for the variation in the forms of the past temporal deictic enclitic. It is not hard to understand how, for example, *acathanihi* could easily be reduced to *acathanii*, especially considering that stress is placed on the last syllable and that it is a relatively long verbal compound. However, most occurrences of this verbal compound in the *PMP* are not reduced but rather written with the long form of the enclitic. So while diachronic change in the longer form of the enclitic is not completely dependent on overall word length, word length does seem to be a factor, especially in very common words. I have already explained how the word *chäbi* for the ‘day before yesterday’ may have developed in modern Chontal. If the change in stress and the added length of words such as these can lead even to a shortening of the root vowel, how much more likely is it that one of the weakest consonants /h/ might also be syncopated in such environments?

The Relationship between -ix and -ihi

Arguments have already been made supporting the presence of both the *-ihi~-i* and *-ix*

187. This factor also lessens the possibility that *-ih* is a resultative (“perfect”) suffix in these contexts, a question raised but not answered by MacLeod (this volume). This issue was already broached and answered in the negative for the reasons given in note 174.

enclitics when *-ihix* and related forms are written. What has not been answered is the question as to how both enclitics could appear in the same sentence and how they function when they do. What appears to be a valid observation concerning the difference between their usage has been made independently by Josie Caruso (personal communication, 1999) and Søren Wichmann (personal communication, 1999). Wichmann notes that “*-ix* operates on the sentence level” and “seems to be a second-position clitic,” while “*-ihi* operates on the predicate level.” Reference to examples from the Acalan text bears out these observations. Twenty-two sentences begin with a form of *cabix*, some of which have already been cited. This verb, meaning ‘it began’, is in the completive with the temporal deictic enclitic *-ix* attached, as in *cabix upulcel* ‘it began their (the god statues’) being burned’. The enclitic *-ix* here occurs in second position, in this case, attached to a verb.

The occurrence of *-ix* on an initial verb does not in itself establish it as a second position enclitic. Evidence would be provided by examples in which the verb is not initial and the enclitic *-ix* occurs instead on the initial word instead of the verb. There are several examples that meet precisely this criterion. As a demonstrative pronoun *hain* ‘this, this one’ begins over 50 sentences in the *PMP*. In effect, it displaces the verb from its sentence initial position. If *-ix* is indeed a second-position enclitic, then when it occurs in such sentences it should be attached to this demonstrative pronoun instead of to the verb. That is exactly what happens in the 22 cases where it occurs in sentences beginning with *hain*. The enclitic *-ix* behaves in the same way with a counterpart of *hain*, *ya*. *Ya* also serves as a demonstrative pronoun with the meaning ‘that, that one’. The word *-ix* attaches to it instead of to the verb nine times when *ya* begins the sentence.

Having seen evidence that *-ix* is a second-position enclitic, is there any evidence that *-ihi~-i* behaves differently from it? If *-ihi~-i* is indeed a predicate-level enclitic, it would instead attach to the verb when another word begins the sentence although *-ix* attaches to that first word instead. That is just what happens in an example we have already seen but will repeat here, *hainix bane pudzihi* (AGI 1614: 156.28–30), ‘this one fled’. The enclitic *-ix* behaves differently from *-ihi~-i* by attaching to the first word *hain*. But because *-ihi~-i* is a predicate enclitic, it attaches to the verb *pudzi* instead.

Although the meaning of the two enclitics is very similar, their behavior in Acalan Chontal is not. They operate independently and follow different syntactical rules. They occur adjacent to each other when the location specified by these syntactical rules happens to coincide. That happens, for example, in a sentence we have already examined in another context: *bixihiix abi paxbolonacha ahau* (AGI 1614: 160.20; Smailus 1975: 53.6). ‘He traveled (went away), it is said, the king Paxbolonacha’. Because the predicate comes first in the form of a verbal compound, *-ihi~-i* attaches to it. But because it is first in the sentence, *-ix* attaches to it as well.¹⁸⁸

Concluding Notes

In all the passages we have examined as well as those we have not, both *-ijiiy~-iiy* and its *PMP* counterpart *-ihi~-i* function as adverbs. They indicate temporal direction just as do

188. It should be noted that these observations are meant to be valid only for the way these two enclitics function in the *PMP*, not in the Classic period inscriptions.

their English counterparts ‘ago’ and ‘after’ in similar contexts. They are not demonstrative pronouns. Instead, except in distant-past contexts, they are dependent on pronouns to set up the situations within which they serve to indicate the temporal direction between the pronominal deictic and its referent. Although they are deictic, they do not point to the referent but rather to a time frame.

These temporal enclitics are also not aspect or tense markers. They are not verbal inflection at all, but enclitics that indicate time adverbially. That is why they can function in both referential and distant-past contexts. Although “grammatical morphemes develop gradually out of lexical morphemes or combinations of lexical morphemes” (Bybee et al. 1994: 4), *-ijiiy~-iiy* had not undergone that metamorphosis in Classic Ch’olan. It behaved adverbially as did *-ihi~-i* in Acalan Chontal, in an unbroken line all the way into colonial times. Time expressed by adverbials, although equally powerful, is quite different from grammatical tense as it occurs in morphological affixes and auxiliaries (see Bybee et al. 1994: 5–9 and Comrie 1985: 13, 30–35). As adverbs instead of inflection, they retain their basic lexical meaning even when used with verbs. Because adverbs may have become inflection later in time—for example, under extreme pressure from foreign language and cultural influences as with the Mayan languages—does not lessen the duty of the linguist to analyze carefully the role played by an ancestral lexeme in a specific synchronic situation.

I have dealt with the issue of distinguishing between lexical temporal indicators and grammatical tense and aspect in this regard elsewhere (Wald 2000a, 2000b), and for reasons of brevity, will mention only a few points here. The temporal deictic enclitic *-ijiiy~-iiy* occurs almost always and perhaps universally only in contexts where there is more than one sentence and where that sentence either refers to another sentence or is juxtaposed to events happening in a different time frame, that is, distant versus near past. It does not occur in sentences standing alone nor in those relatively unrelated to others. But that behavior is quite different from what is expected of present/past tense or incompletive/completive aspect marking. If this enclitic is really either past tense or completive aspect inflection, there should be many situations in which it appears alone in sentences without specific reference to other sentences or events or to a distant-past time frame. Those who opt for a past perfect or pluperfect tense/aspect function for *-ijiiy~-iiy* have a better contextual argument, but there are many passages in which the pluperfect does not fit for back-references and it does not fit in distant-past situations at all. Instead this situation is due to the partial overlap with the domain of the pluperfect in, for example, English or Spanish, and the domain of the past deictic enclitic in Classic Ch’olan and Acalan Chontal. Although this enclitic can sometimes be translated into the pluperfect in English, even in those cases, other translations are often possible or even more appropriate.

It has already been noted several times that the past deictic enclitic occurs on a wide variety of lexical types, from adjectives, to other adverbs, nouns, and verbs. Inflectional suffixes tend not to occur on a variety of word classes and then only when there would otherwise be no verb on which to occur, as for example, in copulaless stative sentences. But just from the few examples we have examined in this essay, it is clear that *-ijiiy~-iiy* occurs on all of these other lexical classes in situations where copulaless stative clauses are not present.

The purpose of this presentation has been to characterize the function and outline the use in context of the past deictic enclitic. Therefore the emphasis was on how it performs

when it occurs. However, it should be noted that the occurrence of the enclitic is not as regular as one would expect if it were an inflection. Because adverbs most often tend to clarify, elaborate, emphasize, and explain situations and events rather than present basic information about them, they do not have to be present as would verbal inflection. If verbs are inflected for tense and aspect in a language, that inflection then has to be present in some way to allow the intended meaning to be understood. But in a variety of circumstances, *-ijiiy~-iiy* is not used by scribes although the circumstances would certainly allow it. This happens when there is a distant-past narrative accompanied by the use of the past enclitic in one part of a text. The passages that then treat more current events avoid the use of the enclitic completely or its use is pared back, most likely to prevent any misunderstanding concerning the difference in time frames. This occurs, for example, on Naranjo Altar 1 (illustrated in Graham 1978: 103) and on Caracol Ballcourt Marker 3 (illustrated in Chase et al. 1991: 5) where later back references with *ukab'ij* and *ukab'* do not include the enclitic although they otherwise often do in similar contexts.

Variation is apparent in distance numbers as well. Sometimes only the *winik* glyph has the enclitic attached, often it is attached to the *haab'* glyph as well but only occasionally is it also attached to the *"k'atuun"* glyph and even more rarely to the *pib/pik* glyph as on Caracol Ballcourt Marker 3. The meaning of the passage is not changed by the presence or absence of this glyph on more than one time period but the actual transcription, reading, literary style, and perhaps emphasis is. This variation occurs with verbs as well. While both *ukob'ow* and *ukab'jiiy* are adjacent parallel verbs near the end of the Palenque Tablet of the 96 Glyphs, only the second verb has the enclitic attached. Since it is an adverb and not an inflection, that is all that is needed to supply the directional temporal indication the scribe wants. Although the scribe could have added it to both verbs, it was not required grammatically.

Even though the evidence presented in this essay has a direct bearing on conclusions regarding the verbal system in Classic Ch'olan, general issues concerning tense and aspect were not its main focus. I have dealt directly with these issues elsewhere (Wald 2000a, b, c; n.d.b). Since I have had access only to a draft of Robertson, Houston, and Stuart's essay on "Tense and Aspect in Mayan Hieroglyphic Script" (this volume), I have hesitated to comment on it here in detail. I must say that there is much in their characterization of my supposed views that I do not recognize or agree with, but I will comment more on that elsewhere. Likewise, I disagree completely with their identification of past-tense inflectional suffixes on verbs in the Classic period texts. In a concluding note to a draft of their essay, they kindly mention that Barbara MacLeod and I have done our best to convince them they were wrong. I must say that I am encouraged by the change in their views over the past few years including their acceptance of the role the past enclitic plays in Acalan Chontal, the emphasis they seem to be placing on the role of adverbs in the Classic texts, their recognition that *-iiy* on verbs is related to the past deictic enclitic, and their acknowledgment that *-iiy* is not a completive aspect suffix. I look forward to the time when they come to realize that Acalan Chontal simply preserved the Classic Ch'olan use of the adverbs *-ijiiy~-iiy* and *yuuwal* while developing incompletive and completive aspect suffixing, although Classic Ch'olan had no suffixes for either present/past tense or the incompletive/completive aspect.

Acknowledgments

I shared my findings concerning the parallel patterns connected with the past deictic enclitic in the Acalan-Chontal document and the Classic Maya hieroglyphic texts first with Barbara MacLeod. We then began to collaborate in working out the details of the forms it takes in the Classic Period and how it interacts with various derivational and other suffixes in the script. Besides many related discussions, Alfonso Lacadena commented extensively on a draft of an earlier paper dealing in part with the topics discussed here. Many related issues were discussed in the Verbs Group during the long workshop sessions of the Texas Maya Meetings. I thank especially Linda Schele for sponsoring and Peter Keeler for continuing them. At one point during the 1997 session, Linda insisted that the insight necessary for interpreting these verbal compounds in the inscriptions would come from colonial documents and, of course, I think she was right. Thanks especially to other group leaders who came by to answer questions and to comment, including Terry Kaufman, John Justeson, Nicholas Hopkins, Nikolai Grube, and Simon Martin. Thanks also to Stephen Houston, John Robertson, and David Stuart who sponsored a symposium in Provo on issues of verb morphology and for other discussions and exchanges over the past few years. Thanks also to Brian Stross, Søren Wichmann, Josie Caruso, Joan Henriksen, Victoria Bricker, and Andrew Hofling, who have made detailed comments on different papers that treated many of the topics discussed here. Thanks also to Michael Carrasco and Kerry Hull for more recent discussions on verb morphology. My apologies to anyone I should have thanked but have not.

TEN

Tense and Aspect in Maya Hieroglyphic Script

JOHN ROBERTSON

Brigham Young University

STEPHEN HOUSTON

Brigham Young University

DAVID STUART

Peabody Museum, Harvard

The aim of this paper is to account for tense and aspect in Maya hieroglyphic script. Such an account is plausible under three conditions.¹⁸⁹ First, it must explain the data found in the hieroglyphic corpus. An explanation that fails to work morphologically, syntactically, and semantically remains an impressionistic approximation, inadequate for present-day, more precise understandings of the script and the language it generally records (Houston et al. 2000). Second, the proposal must account for linguistic ancestors and descendants. If the proposed tense/aspect system can neither descend logically from Common Mayan (via Common Wasteko-Ch'olan) nor feasibly produce its offspring, Colonial Ch'olti' and ultimately modern Ch'orti', then the proposed explanation lacks methodological rigor (Robertson 1998).¹⁹⁰ Finally, the explanation must be typologically credible. If the events resulting in the proposed tense/aspect system found in the hieroglyphs have no typological analogues in languages of the world, then the account is likely to be mistaken.

189. We use the orthography set out by the Instituto Indigenista Nacional, with the proviso that the symbol *x* is sometimes used as a retroflexed alveopalatal fricative (e.g., in Mamean languages), and sometimes as a simple alveopalatal fricative (in other languages). In Mamean, however, *xh* is used to signal an alveopalatal fricative. This can be confusing when reconstructing protolanguages, including subgroups. In reconstruction, we assume that *x* always stands for an alveopalatal fricative, and that an *x* with a dot under it is a retroflexed alveopalative fricative. Another point of possible confusion in reconstruction might emerge with the velar nasal, which according to the Instituto should be written *nh*. It is conceivable that this could be meant to signal two phonemes, *n* and *h*, or the phoneme /N/. Accordingly, we use the symbol *N* to signal a velar nasal.

190. We have already established the plausibility of Ch'olti' and Ch'orti' being descendants of Classic Ch'olti'an (Houston et al. 2000). It follows that the tense/aspectual system of the descendent Ch'olti'an languages should be derivable from the language of the Classic Maya script. The Common Wasteko-Ch'olan grouping is more controversial because of widely accepted claims that Wastek is a

Underlying our proposed explanation, however, are certain assumptions regarding the nature of tense and aspect. These assumptions themselves require brief explanation before the paper can turn to tense and aspect in the script.

The Properties of Tense and Aspect

Since Jakobson's (1971) groundbreaking article of nearly half a century ago, "Shifters, Verbal Categories, and the Russian Verb," research has substantially refined and clarified our understanding of tense and aspect. But the general sense of "tense/aspect" has remained surprisingly consistent over the years. There is common consensus that tense and aspect are verbal categories (Frawley 1992: 294–95, 336) and that aspect is nondeictic and self-contained, whereas tense is deictic, referencing the here-and-now of the speech act (Jakobson 1971; Comrie 1985: 2–3). Thus, while tense and aspect both characterize a verbal state or action, aspect qualifies or even quantifies that state or action, defining, for example, whether an event is ongoing (incompletive) or completed (completive) (Jakobson 1971: 134; Comrie 1976: 3).¹⁹¹ In contrast, tense requires that the narrated verbal action or state refer to time, usually the here-and-now of the speech act (Jakobson 1971: 235; Comrie 1976: 5, 1985: 5, 9). In "he ate the sandwich," the past tense specifies that the action of eating took place before the time of the utterance; in "he is going to eat the sandwich," the eating must occur some time after the actual utterance. Accordingly, tense is deictic, since deixis occurs whenever the narrated event refers to the speech event (Jakobson 1971; Lyons 1968: 275–81; Comrie 1985: 14).

Linguists have discussed and elucidated the deictic distinction between tense (especially present and past) and aspect (especially completive and incompletive). Less well de-

distant outlier of the Mayan family tree (Kaufman 1972). Good grounds exist for believing that such claims are in error. Campbell (1977: 100–101) suggests that Wastekan "shares almost all the [phonological] innovations which define Cholan-Tzotzil as a subgroup," including **k > ch*, **q > k*, **ty > t*, and **r > y*. The only difference is that **N > n* in Ch'olan-Tzotzil, whereas it goes to *h* in Wastek.

Furthermore, Robertson (1993) has shown that the Wastekan pronominal system, which superficially looks very different from other Mayan languages, is reconstructible to a pronominal system that is clearly ancestral to Tzotzil. Moreover, the completive aspect for intransitives is *-e-y*, which comes from the Common Mayan adverbial past-tense marker **-eer* (see later in the text). This innovative displacement of Common Mayan completive **Ø* is unique to the Ch'olan-Tzeltalan area. Along with this change, we find the incompletive to be marked with *V-I*, (where the vowel is usually *e*), which is an innovative, nominalized form whose etymology is found in the progressive aspect, as shown in detail in the paper.

Campbell (1977: 101) says of phonology that "it seems unlikely that so many [changes] would have occurred independently." The morpho-syntactic innovations that clearly belong to the Ch'olan-Tzeltalan area make it impossible for us to believe that the Wastek could have had a history different from all other Mayan languages. If English speakers, for example, were to have been placed in the middle of China for the last 2,000 years, one should not be surprised to see rather dramatic, non-European characteristics enter into the language. Such an impetus for change set Wastek up for the dramatic, extant differences when it lost contact with other Mayan languages. Nonetheless, when those differences are carefully peeled away, we find a language that belongs to the Ch'olan/Tzeltalan subgroup of Mayan languages.

191. To avoid confusion with perfectum/imperfectum (tense markers in Latin), we use the terms completive/incompletive when referring to aspect. The terms imperfective/perfective are also commonly used, especially in Slavic, in referring to aspect. In this paper "completive" and "perfective" are to be understood as having the same meaning, as are the terms "incompletive" and "imperfective." We use perfective/imperfective only in citations (see Comrie 1976: 12).

fined is the strong semantic relationship between the completive aspect and past tense, and the incomplete aspect and present tense. Comrie (1976: 120) merely notes that there are significant “correlations between past tense (or time reference) and perfective aspect on the one hand and present tense (or time reference) and imperfective aspect on the other.” Typically, translations into English correlate the completive aspect with the past tense and the incomplete with the present.

Yet it is surprising how few treatments address the underlying, natural affinity of the completive/past and the incomplete/present, a situation made even more puzzling by the synchronic and diachronic data affirming their semantic kinship. Since Jakobson, it has been generally agreed that deixis is the characteristic that distinguishes present/past tense from incomplete/completive aspect. However, no one has characterized the qualities that distinguish the completive/past from the incomplete/present (except, see Robertson 1992: 63–65). It is important to do so for purposes of this paper.

The reason for the overlap between past/incomplete and present/completive can be seen in their respective behaviors. Both past and completive reference “definite facts of existential, experiential reality” (Robertson 1992: 64), while the present and the incomplete tend to be less specific and more general—even probabilistic—in their reference. Thus, when someone says, “the water boiled at 212 degrees Fahrenheit,” the unmarked reading would reference a *specific*, factual event of water boiling at a specific time and place in the real world of fact. The statement that “water boils at 212 degrees Fahrenheit” has instead an unmarked reading of *generality*. It refers to a general law governing the behavior of water when heated under particular conditions.¹⁹² The motivation for such a tenacious overlap between past tense and completive in languages of the world is that both past and completive tend to be particular and factual, since tense typically references action before the here-and-now (i.e., time gone by), those actions are facts of reality. Similarly, completed action also tends to be viewed as particular facts of the existential world. Furthermore, the similarity between the incomplete and present comes from the consideration that, of necessity, all languages must find a way to refer to laws, habits, or even rules whose modes of being are general and inexhaustible: “Books written in English read from left to right”; “that tickles”; “raisins are dried grapes, and prunes are dried plums.” Aspectual languages would render such sentences in the incomplete, just as languages with tense would put them in the present.

ASPECT	TENSE
COMPLETIVE particular nondeictic	PAST particular deictic
INCOMPLETE generic nondeictic	PRESENT generic deictic

Figure 10.1 summarizes the relevant attributes of aspect and tense (see also Robertson 1992: 65).

Figure 10.1

192. It is significant that with *-ed* the definite article tends to be used, as “the water boiled at 212 degrees Fahrenheit,” but not “water boiled at 212 degrees Fahrenheit.” Similarly, in a nondefinite setting, it is more appropriate to say “water boils at 212 degrees Fahrenheit,” but less appropriate to say “the water boils at 212 degrees Fahrenheit.” Count nouns can be either “horses eat oats,” or “the horse eats oats,” but in this case “the horse” can be interpreted nonspecifically.

Markedness in Tense and Aspect

In aspectual languages that do not mix tense with aspect (unlike Russian or modern Greek), there is an overwhelming tendency for the *completive* to be the unmarked aspect, and for it to carry “high-focus” or foregrounded information (Axelrod 1993: 177). Yoruba illustrates this pattern, in that the completive is literally unmarked, while *n@* attaches to the incomplete. Igbo, a closely related language, uses a completive that is unmarked, while *nà*, clearly cognate with *n@*, denotes the incomplete (Welmers 1973: 345–47). In much the same way, the Sudanese languages Moru-Madi have an incomplete that is more complex morphologically than the completive (Andersen 1984: 237–38). The *present tense* contrasts with this in showing a powerful inclination to be unmarked in language (Jakobson and Pomorska 1983: 97–98). Thus, the completive aspect and present tense are predominantly unmarked, while the incomplete aspect and past tense are habitually marked (Figure 10.2). Moreover, tense and aspect are sometimes combined, as shown in Figure 10.3.

ASPECT	TENSE
COMPLETIVE particular nondeictic <i>Ø</i>	PAST particular deictic <i>marked</i>
INCOMPLETE generic nondeictic <i>marked</i>	PRESENT generic deictic <i>Ø</i>

Figure 10.2

PAST COMPLETIVE <i>Ø</i>	PAST INCOMPLETE <i>marked</i>
PRESENT COMPLETIVE <i>marked</i>	PRESENT INCOMPLETE <i>Ø</i>

Figure 10.3

In describing “the interaction of aspect and tense” Comrie (1976: 121) observes that “in combination with past tense there is generally in language a tendency for the perfective [or completive] aspect to be unmarked, while with the present tense the tendency is for the imperfective [or incomplete] aspect to be unmarked.” Indeed, in those languages that manage to combine aspect with tense, as in Slavic, the past-completive and the present-incomplete seem to be unmarked, whereas the present-completive and the past-incomplete are marked. Comrie (1976: 120) notes that “the most usual forms are precisely the Perfective Aorist [i.e., past-completive] and the Imperfective Imperfect [i.e., the present-incomplete], while the other possibilities always carry some special meaning: the Perfective Imperfect [past-incomplete] typically carries habitual meaning, while the Imperfective Aorist [present-completive] in Bulgarian often has general factual meaning.” Frequently, the present-completive category takes on another function, as “future” in Russian,¹⁹³ or it

193. In Russian, which apparently had no future tense historically, the present-perfective came to mean future (Comrie 1976: 66–71). Significantly, the Ancient Greek future came to signify the present-imperfective in modern Greek, a shift undoubtedly prompted by the development of a periphrastic-future (Comrie 1976: 96–97), which would have allowed a reinterpretation from future to present-perfective. Simply put, the incomplete and present most naturally correspond, as do the completive and past.

has a specialized meaning, as factual present in Bulgarian (Comrie 1976: 69),¹⁹⁴ or it simply does not appear, as in Spanish. The past-incompletive is more commonly found in languages of the world. Spanish contrasts the preterite (*comió* ‘he ate’) with the imperfect (*comía* ‘he was eating’), whereas in the present tense there is no such aspectual distinction (*come* ‘he eats/he is eating’). The improbability of both the present-completive and the past-incompletive is discussed later in the context of Mayan languages.

Tense and Aspect in Common Mayan

The markedness relationships of tense and aspect as described above are realized in Common Mayan in a direct and indirect way. Aspect was a verbal category that was directly prefixed to the verb. The completive aspect is reconstructed as Common Mayan *Ø, and is the unmarked aspect; the incompletive is reconstructed as the prefix *ka- and is the marked aspect (Robertson 1992: 63ff.). A good example of this distinction is found in the Horno de Cal dialect of Tektitek: Ø-*ooq* ‘cry’ ‘he cried’ versus *n-ooq* ‘incompletive-cry’ ‘he cries’ (Robertson field notes, 1972), in which the *n-* replaced *ka-. Tense, however, is not directly a verbal category per se, since temporal marking was strictly adverbial. Even so, adverbial temporal marking was an important part of Common Mayan verbal expression. This is evidenced by a gradual inclusion of adverbial temporal markers in all subgroups of Mayan into what was historically an aspectual system (Robertson 1992).

There seem to have been three different types of adverbial markers of time, the first signaling absolute time, the second relative time, and the third systematic or calendric time. The first is *ix, as conserved in Tzeltalan and Ch’olan, meaning ‘recent past’: for example, Ch’olti’ *puiul ix* [puy-ul ix] burn-adjectival already ‘it’s already burned’ (Morán 1695). This morpheme was recruited as a verbal marker in Q’anjob’alan, Mamean, and K’iche’an to mean ‘recent past’/‘past time of today’. Ultimately, in Kaqchikel, for example, it lost its purely deictic content to become a simple marker of the completive aspect.¹⁹⁵ The second, found largely in Ch’olan (but probably borrowed into Poqomchi’, a K’iche’an language), is the prefix *a-*. In Acalan (Colonial Chontal), it is attached to the completive to give a sense of ‘already’, or even present perfect, as for example *a-k-ub’i-n*, already-erg1-hear-incompletive, ‘I have already heard it’. In Ch’olti’, if *a-* was attached to the completive, it signaled a sense of a habitual state or action; if attached to the incompletive it gave the sense of a determinative future (see Robertson 1998):

- habitual present:** *tzucuan* [tzuk-wan], ‘he sat down’; *a-tzucuan u-puczical* [a-tzuk-wan u-puksikal], ‘sits down his heart’, i.e., ‘he is at peace’
determinative future: *u-tal-el*, ‘he is coming’; *a-tal-el*, ‘he will [has to] come’

Although the exact sense is different in Acalan and Ch’olti’an, it seems clear enough that this *a-* is a relative deictic, since (a) it always has a temporal reference, and (b) it means “bring the completive into present time or bring the incompletive into future time.” Thus, it shifts the completive (past) to present, and the incompletive (present) to future.

194. The factual present would be, for example, a “blow-by-blow” report of a boxing match: “Butch hits Ralph with a left; and then receives a hard jab to face.” (See Comrie 1985: 82).

195. See Robertson (1975) for a more thorough discussion.

ASPECT INFLECTIONAL	TENSE ADVERBIAL
COMPLETIVE specific nondeictic *Ø	PAST specific deictic *-eer
INCOMPLETIVE non specific nondeictic *ka-	NONPAST nonspecific deictic *Ø

Figure 10.4

‘nine days hence’ (Stuart et al. 1999b: 34). Linguistic descent of Classic Ch’olti’an reflexes from Common Mayan ones is explained in Houston et al. (1998: 293); note, too, that the disharmonic syllables are pivotal, in that they yield the predicted result of Common Mayan *-eer > Common Wasteko-Ch’olan *-eey > Classic Ch’olti’an *-iyy). It is important to observe that the form *-eej is a suppletive (irregular) form of ‘day’, since other adverbs of time, such as *ha’ab, ‘year’, are substitutable. This calendric system is found in all Mayan subgroups, and goes securely back to Common Mayan times (Kaufman and Norman 1984: 145). Note, too, that the -eer, ‘past time’ suffix can appear on adverbs of location, as in Q’eqchi’ *najt*, ‘way over there’ against *najt-er*, ‘long ago’; or Classic Ch’olti’an ’o-na, *oon*, ‘many’ (< Common Mayan *ooN) against Ch’olti’ *on-i*, many-past, ‘a long time ago’, Kaqchikel *oj-er*, ‘a long time ago’ (Houston et al. 2001). (This marker -eer will figure prominently in the discussion that follows.) Recall that for aspect, the completive was marked and the incompleted marked, whereas for tense, the present (nonpast) was unmarked, and the past marked (Figure 10.2). Common Mayan exemplifies this pattern (Figure 10.4).

Tense and Aspect in Classic Ch’olti’an

With these concepts in mind, an argument can be made that the adverbial tense system (see Figure 10.4) took over the verbal aspect system. That is, the Classic Ch’olti’an system of aspect had become a tense system, the present being the unmarked member of the opposition, and the past being the marked member. There are good reasons for this assertion, and the remainder of the paper aims to justify our claim in some detail.

First, we establish the typological plausibility of such a shift by citing Torben Andersen’s (1994) article on aspect to tense in Lulubo, a Sudanese language. Next, we give comparative historical evidence for this shift, showing how such a shift is possible, given the form of the ancestral system. Then, we provide evidence that the rhetorical substance of the script is wholly consonant with the tense system proposed for Classical Ch’olti’an. Finally, we summarize the reasons why we are compelled to disagree with the standard

196. Typically, the term “nonpast” is used to mean ‘present’ or ‘future’. In those systems that do not have a marker for the future, the so-called nonpast has a range of reference that includes futurity. Such is the case with the calendric adverbs of time in Mayan languages.

The third, *systemic* marker of time is most relevant to what follows. It takes this form in Common Mayan: *NUMERAL+TIME.UNIT+(*eer*). The system is one of past/nonpast: *ox-ej-eer, three-days-past, ‘three days ago’, *ox-(h)a’ab’-eer, three-year-past, ‘three years ago’, versus ox-eej, three-day, ‘three days from now’, ox-(h)a’ab’, ‘three years from now, in three years’.¹⁹⁶ The Classic script includes reflexes of the type, WAXAK-ji-ya, *waxak-(i)j-iyy*, ‘eight days ago’, or B’OLON-ni-ji, *b’olon-ij*,

views regarding the aspectual inflection of the hieroglyphs. Such views include the widely held claims that split-ergativity is the aspectual system underlying the hieroglyphs, that there is no unambiguous appearance of the incomplete in the hieroglyphs, that the complete—the only aspect purportedly found in the script—is literally unmarked, that the suffix *-iiy* is not a member of the complete/incomplete system, but is a mere deictic clitic. We feel that enough evidence exists to make these views untenable.

The Typological Plausibility for the Shift from Aspect to Tense

The claim that a purely aspectual system could become a tense system might seem unusual or even impossible to those acquainted with modern Indo-European languages, but there are several instances of this kind of shift. Comrie (1976: 120–21), for example, points to the fact that “in Indo-European . . . we have evidence of an earlier stage with an aspectual opposition between Perfective (Aorist) and Imperfective (Present) stems, with the Perfective normally having past time reference, and the Imperfective having present time reference.” That is to say, an aspectual system, because of the tight relationship between complete/past and incomplete/present, became a tense system. Similarly, Sudanese Lulubo provides an excellent example of a similar change that occurred in the recent past. While Lulubo belongs to the Moru–Madi language or dialect cluster spoken on the Sudan–Uganda–Zaire border areas, it is apparently a separate language, despite its near-dialectal status (Andersen 1994: 235). Lulubo’s congeners, Moru and Madi, have an incomplete that is highly marked, and a complete that is unmarked (Andersen 1994: 245). In Lulubo,¹⁹⁷ however,

the morphosyntactic restructuring [from aspect to tense] also changed the markedness relation between the perfective [past] and the imperfective [present]. Before the restructuring the imperfective was formally very clearly the marked member of the opposition, since it was expressed by way of an auxiliary verb. After the restructuring the imperfective can still be said to be formally the marked member, since morphologically it is less basic than the perfective. However, the formal markedness is now much less clear, so the morphosyntactic restructuring has resulted in a relative demarking of the imperfective vis-à-vis the perfective.” (Andersen 1994: 249)

This shift from aspect to tense with a concomitant “demarking” of the old incomplete (new present) accords with Figures 10.2 and 10.4, which show the complete to be unmarked for aspect and the present to be unmarked for tense. Besides Indo-European and Lulubo, we propose that the language registered in the script followed suit. That is, the pre-Classic Ch’olti’an system of aspect became a Classic Ch’olti’an system of tense, where the adverbial present, *Ø, displaced the old incomplete, *x- (which displacement prompted *x- to become a future marker), and the adverbial past, *-iiy*, became a verbally inflected marker of the past tense. Displacements of this sort abound in the Mayan languages (Robertson 1992: 113, 127, 143, 155, 173, 176).

197. It is important to note that despite the fact that the semantic opposition in Lulubo is of tense and not of aspect, for convenience Andersen (1994: 236) uses the terms “perfective” and “imperfective” when referring to the past and present.

Beyond this formal demarking, however, are dramatic consequences for the way in which the imperfect (present) and perfect (past) perform in discourse. In Moru and Madi, the distribution of the completive and incompleted is what one normally expects, given a completive/incompleted opposition: the completive is the backbone (background) of the discourse, while the incompleted supplies additional, foregrounded information (Axelrod 1993; Hopper 1979: 219; L. Jones and Jones 1979; Wallace 1982: 209). With Lulubo, however, the “distribution of the perfective and imperfective clauses is strangely different from Moru” (Andersen 1994: 253). In Moru/Madi, “events on the event line are described with perfective clauses,” while in Lulubo “such events are almost always described with imperfective [present]¹⁹⁸ clauses” (Andersen 1994: 253). The same state of affairs is true of Mayan, where events on the story line presuppose the completive, while elaborations and background material presuppose the incompleted (Houston 1997). But like Lulubo, where narrated events “are almost always described with imperfective [present] clauses,” the hieroglyphic record, we contend, uses the present to introduce new events.

Houston (1997: 299) notes that “Maya glyphs do not conform to Paul Hopper’s discussion of aspect and foregrounding in discourse” (Hopper 1979: 213), where the completive renders the skeletal story line, and the incompleted amplifies those events. He gives a narrative sample from Hieroglyphic Stairway 3, Step III, from Yaxchilan, which has Event 1, **chu-ka-ja/AJ**, *chu[h]kaj*, ‘he is seized’; Event 2, **chu-ku-ji-ya**, *chu[h]kjiy*, ‘he was seized’ (referring back to Event 1); *’i-uti*, *’i-u-ti*, ‘then it happens’; Event 3, *uti u-k’al-le?*, *’i-u-ti/u-K’AL-le?*, ‘his/its tying happens’ (this passage remains somewhat opaque because of erosion); Event 4, **’i-K’AL-ja/AJ**, *’i-k’a(h)laj*, ‘then it is tied’ (Stuart 1996). The name of regalia attached to his *b’aah*, ‘forehead, head, self’, follows. Many other examples could be added—the pattern of alternation or restatement is well-known to Maya epigraphers—but one will suffice: Tortuguero Monument 6, A5–B9, records a segment with the following sequence of verbs (subjects, titles, and temporal counts have been omitted): **si[h]yaj*, ‘he is born’ (reconstructed but contextually certain), linked to *si[h]yajjiy*, ‘he was born’; then *chumwani* ‘he sits’, connected to *chumwaniiy* ‘he sat’. The fullest information occurs only with the initial statement; the second statement propels the story line and removes ambiguity about verbal reference points in relation to counts of elapsed time (temporal notations called “distance numbers”). With extremely rare exceptions, simple texts with few clauses or only one temporal statement occur, we propose, in the present tense. In general, then, Classic Ch’olti’an narration seems closely allied typologically to Lulubo, where the contrast is neither aspect nor absolute tense (present moment as the deictic center) but rather relative tense (contextually given point-in-time as the deictic center) (Comrie 1985: 36, 56). Andersen’s description of how relative tense works in Lulubo coincides with the narrative line of the Maya hieroglyphs:

[T]he perfective [past] form can be interpreted as a relative past tense, and the imperfective [present] form can be interpreted as a relative non-past tense. In narratives, each event on the event line provides the reference point for the location of the situation described by

198. Andersen says that “in Lulubo the semantic opposition seems to be one of tense rather than one of aspect. For convenience, however, I will continue using the terms “perfective” and “imperfective” when I refer to the morphosyntactic constructions involved.

the next clause. If the time of that situation is past relative to the reference point, the perfective [past] form is used; and if it is non-past, the imperfective [present] form is used. . . . [W]here the context does not provide any explicit reference point, the latter is, by default, taken to be the present moment (Andersen 1994: 256, our emphasis).

Andersen's synchronic description of present/past nicely describes, in morphological and semantic terms, the entire corpus of the Maya hieroglyphs. Furthermore, it is typologically plausible for a system to shift from aspect to tense, as apparently happened in Indo-European (Comrie 1976: 120–21). More to the point, when Lulubo shifted from aspect to tense, the discourse pattern “flipped:” The unmarked present assumed the discourse function of the old completive, and the marked past took on the discourse function of the old incompletive. Classic Ch’olti’, as evidenced in the script, did the same thing: the newly minted present ($\emptyset$) assumed the discourse function of the old completive ($\ast\emptyset$), and the new past ($-iiy$) took on the function of the prior incompletive ($\ast x-$), which subsequently became a future, as attested in Ch’olti’.

Given the synchronic and typological plausibility outlined above, it now remains to demonstrate that it is diachronically possible for an earlier Mayan system of aspect to become a tense system.

The Shift from Common Mayan to Wasteko-Ch’olan

As shown in Figure 10.4, Common Mayan marked aspect verbally and tense adverbially. Verbally, $\ast\emptyset$ marked the completive, and $\ast ka-$ the incompletive, whereas $\ast-eer$ marked the past and $\ast\emptyset$ marked the nonpast. Common Wasteko-Ch’olan retained this same system, except for the phonological shift: $\ast ka- > \ast ch- > x-$ (Robertson 1992: 186). Adverbially, $\ast\emptyset$ marked the present (or nonpast) and $\ast-eer$ the past. Again, Common Wasteko-Ch’olan retained this system, but with a phonological change: $\ast-eer > \ast-eeey$. The Ch’olan languages subsequently shifted ee to ii and oo to uu , changing $\ast-eeey$ to $-iiy$ (Kaufman and Norman 1984: 87). The daughter languages that constitute the Wasteko-Ch’olan subgroup also began to use the past-tense morpheme $\ast-eeey$ as a verbal suffix. Because $\ast-eeey$ was used in such different ways according to the language, we must conclude that the spread of $\ast-eeey$ was an areal phenomenon, taking place sometime after the languages separated, as will become apparent below. Finally, for typological reasons, it is important to recognize that the movement from deictic adverbial morpheme to verbal inflectional morpheme is a phenomenon that pervades Mayan languages.

The Common Mayan adverbial markers of tense, $\ast ix$, ‘recent past’, and $\ast-eeey$, ‘past’, both figure prominently in the tense/aspectual history of the Mayan languages. In the Q’anjob’alan, Mamean, and K’iche’an languages the tense marker $\ast ix$ became a verbally inflected tense/aspect. It was prefixed to the verb, but for a time, still retained its deictic, temporal function. In some languages, however, it ultimately converted into a simple marker of the completive aspect (see Robertson 1980, 1992: 98 ff., 125ff., 155ff.). This differs from Wasteko-Ch’olan, where the ix preserved its original clitic and deictic function.

In this regard, it is important to note that a newly recruited tense marker can have an inflectional while retaining an adverbial deictic function. Such is the case with $x-$ mentioned above. Having progressed from the adverbial deictic ix , to the inflectionally

prefixed *x-*, (e.g., *x-oj-war* ‘I slept’) it has nonetheless maintained at least part of its original deictic meaning. Consider, for example, what Rosales (1748: 90) states for Kaqchikel. The *x-*, which “antepuesta a nombres, verbos o participios significa: desde o despues que. . . [is prefixed to nouns, verbs, or participles, and means: ‘since, or after’ as for example *x-hun-ab-ir* ‘for a year now’].” Compare *hun-ab-ir* ‘hace un año’ (Saenz 1940) and *x-hun-ab-ir* ‘desde hace un año’ Rosales (1748: 90); *mier* ‘hoy, hace un rato’, and *x-mier* ‘anteriormente’.

It also appears on nominalized forms, as *x-w-ul-ibem* ‘despues que vine [‘after my coming’], or *x-r-oqu-ibem*, ‘después que entró’ [‘after his/her entering’] (Rosales 1748: 90). There is even a distinction between present perfect *ul-inaq* ‘ha venido’ and *x-ul-ineq* ‘después de venido’ [‘after having come’] (Rosales 1748: 90). Since the present-perfect intransitive *-inaq* and the transitive *-Vm* cannot take the *x-* inflectionally, the *x-* is functioning deictically. Finally, it can even be found on words like *x-3ek* [x-q’eq], meaning ‘anoche’ [lit., black-ago], *x-q’iak’ij* [x-k’i’-a?-q’ij] ‘de tiempo, hace mucho tiempo’ [lit., deictic-many-?-day], *x-q’oyam* [x-k’oyam] ‘adv. de tiempo, hace algún tiempo’, *xq’oyam chi-k’ij* ‘hace días’ (Saenz 1940). These are all important deictic functions, where *x-* is prefixed to forms other than normally inflected verbal forms, and it has a strongly temporal, deictic function. Below, we will see a similar state of affairs with reflexes of Common Mayan **eer*, where it became a tense/aspect marker, but at the same time maintained an adverbial, deictic function.

Unlike **ix*, the clitic **-eer* was less productive among the highland languages, frozen to some adverbials, as in Kaqchikel *miy-er* (< *may-eer*), ‘recent past’, and *oj-er* (**ooN-er*), and employed in the construction NUMERAL-TIME.UNIT-*eer*, as in Colonial Kaqchikel, *hun-ab-ir*. This stands in stark contrast to the exceptional productivity of **eey* (< Common Mayan **eer*) in Wasteko-Ch’olan, particularly as it came to be affixed to verbs, with ever increasing productivity as an inflected member of the verbal system. Tzendal’s use of *ey* was slightly different from the remaining Wasteko-Ch’olan languages. In Tzendal (Anonymous n.d.), *ey* was used as a relative tense marker, translatable into Spanish as the past imperfect. In effect, it moved the incomplete “present” *x-* back in time. Compare, for example the complete, the incomplete, and the imperfect (Figure 10.5).

Incomplete	Past Imperfect	Complete
x-muy hoon	x-muy hoon ey	u-muy on
comp-go.up abs1sg	comp-go.up abs1sg past	compl-go.up abs1sg
‘I go up’	‘I was going up/used to go up’	‘I went up’

Figure 10.5

In this case, *ey* simply augmented the already existing aspectual system. This use of *ey* stands in contrast to what happened in Wastekan and Ch’olan. Rather than broadening the aspectual system, the adverbial tense system, **Ø* ‘nonpast’ and **-eey* ‘past’, replaced the aspectual system in the Ch’olan languages. We should note, however, that the **-iïy* tended to move from adverbial to verbal suffix only with those verbs that had a single argument: the intransitives, the passives, the mediopassives, the antipassives, and the

intransitive positionals.¹⁹⁹ Transitives, with two arguments, were the last to participate in this move. Thus, in Wastek, *-e(:)y* occurs only on intransitives: *hak-ey* ‘it separated’.²⁰⁰ In Ch’ol, the **-iiy > -i(y)* is not found on transitives. In Acalan Chontal, however, the *-i* (< **-iiy*) did spread to transitives, thus marking the completive both for transitive and intransitive verbs: *tal-i*, come-completive, ‘he came’; *u-tal-el*, erg3sg-come-incompletive, ‘he comes’; *uy-il-i*, erg3sg-see-completive, ‘he saw it’; *uy-il-an*, erg3sg-see-incompletive, ‘he sees it’. There is some question whether *-iiy*, which was originally a marker of intransitive constructions, began to spread to the derived transitives, but this is addressed in more detail below. For now, it suffices to say that just as **ix* moved from an adverbial to a verbal marker in the highland languages, so the **-eey* similarly shifted in Wasteko-Ch’olan. We emphasize that historically **-iiy* was attached to intransitive verbs and only later to transitives in Acalan.

The Use of **iiy* in Classic Ch’olti’an

What is of particular interest is the wholesale, systematic way that **-iiy* became a part of the verbal system of Classic Ch’olti’an. Not only did **-iiy* invade the verbal system as a deictic, to become an inflectional marker of past tense, but its unmarked counterpart, **Ø*, came to mark the present tense. By analogical process, the new present-tense marker, the old incompletive marker *x-*, was bumped to the future tense, and the old future marker became a negative future, yielding the changes shown in Figure 10.6. The reason that the present has its unmarked role in Classic Ch’olti’an comes from the fact that, as pointed out earlier, the present tense is the unmarked tense and the completive aspect is the unmarked aspect (Figure 10.7).

Hence, the unmarked form in the original aspectual system, as for example, **hul-i* ‘he/she arrived’], became the unmarked member of the tense system *hul-i*, ‘it arrives [present]’. Furthermore, the marked member of the original aspectual system, **x-hul-i* ‘it arrives [incompletive]’, was displaced to become a future marker, **x-hul-ik* ‘it will arrive’.

199. An anonymous reviewer said this regarding the fact that the Ch’olti’an languages (Classical Ch’olti’an, Ch’olti’, and Ch’orti’) do not distinguish tense/aspect in the morphology of transitive verbs: One of their arguments for identifying Ch’olti’ as the language of the Maya hieroglyphs is that the script makes neither aspectual nor tense distinctions in the morphology of transitive verbs. If such distinctions are not necessary for transitive verbs, they are *logically* unnecessary for intransitive verbs as well. Thus, their argument for tense in the language of Maya hieroglyphs has little to recommend it, absent such evidence in Colonial Ch’olti’.

We note simply that it is a grammatical fact that Ch’olti’an does not distinguish aspect/tense in the morphology of transitive verbs, but it does with intransitives. While it is true that it is logically possible for unmarked categories to have the same grammatical distinctions as the marked counterpart, it is also true that they often do not; the unmarked category very often has more distinctions than the marked category. This has been recognized since the Prague School and before: for example, English 3sg. *he, she, it*, or Ch’olti’ split ergative in the intransitive versus English 3pl. *they*, or Ch’olti’ transitives with no tense/aspect distinction. Thus, while it is logically possible for transitives and intransitives to have identical tense/aspect distinctions, it is certainly not required. If one of them is absent such distinctions, it will inevitably be the transitive and not the intransitive verbs.

200. The *-ee* of *-eey* is seen as a thematic vowel, but this is likely a restructuring that took place when Wastek moved from its Maya homeland. It is surely the case that the *-Vy*, which is almost always realized as *-eey*, has its etymology as Common Mayan **-eer* ‘past tense’.

Common Ch'olan	<i>*hul-i</i> 'it arrived' completive	<i>*x-hul-i</i> 'it arrives' incompletive	<i>*el-hul-i</i> 'it will arrive' future	— — negative future
Classic Ch'olti'an	<i>hul-i:y</i> 'it arrived' past	<i>hul-i</i> 'it arrives' present	<i>*x-hul-ik</i> 'it will arrive' future	<i>*el-hul-i</i> 'it will not arrive' negative future

Figure 10.6

Common Ch'olan	COMPLETIVE <i>*hul-i</i> 'he/she arrived' <i>unmarked</i>	INCOMPLETIVE <i>*x-hul-i</i> 'he/she arrives' <i>marked</i>
Classic Ch'olti'an	PAST <i>hul-i:y</i> 'he/she arrived' <i>marked</i>	PRESENT <i>hul-i</i> 'he/she arrives' <i>unmarked</i>

Figure 10.7

We note that when the incomplete *x-...-i* became a future marker, it acquired the optative *-ik* suffix, which comes from Common Mayan *-oq*, yielding *x-...-ik*, as, for example, *hul-i* 'he arrived', against **x-hul-ik* 'he will arrive' (Robertson 1992: 177). The *x-* future is well attested in Ch'olti' as shown above, although it has not been attested in the script.

There is a strong indication that the *x-* future in Ch'olti' was historically an incomplete. First, it is an incomplete in Tzeltalan (Figure 10.5; Robertson 1992: 186). Second, derived transitives take an *-n* suffix in the incomplete in the Ch'olan languages (Kaufman and Norman 1984: 93): for example, Acalan, *uy-ila* 'he saw it', and *uy-ila-n* 'he sees it'.²⁰¹ The same *-n* shows up in the Ch'olti' future of derived transitives: *inuila misa* [inw-ila misa] erg1sg-see-mass, 'I saw/see mass'; *xinuilan misa* [x-inw-ila-n misa] future-1ergsg-see-future mass, 'I will see mass'. Third, the motivation for the movement of the *x-* incomplete to the future is reasonably given by the shift from aspect to tense: **Ø* present displaces the **x-* incomplete, and the **-iiy* past displaces the *Ø* complete.

201. It is interesting that not only did the new present form "bump" the incomplete *x-...(-n)* to become a future marker but also, at the moment that *x-* became a future marker, the old *el-* was restricted in its meaning to be a negative future.

El segundo futuro se hace con esta particula el, que significa prohibicion. Y es de notar que siempre que se usa de esta particula se a de hablar con el veruo de preterito i no de futuro, aunque la orasion sera de futuro: aēale au-otot, hisiste tu casa; el aēale au-otot, eonahel, no haras otra tu casa; xaubin sermon, oiras sermon; el aubi axci pehcēahel, no oiras (l.) no oigas malas palabras. y no diremos el aubin (1). el a-ealen, sino el a-eale, que es lo mismo que ma xaēalen. Quando se pone la particula el, no se añade la n a la final del future. (Morán 1695)

[The second future is formed with the particle *el*, which signifies negation. And it should be noted that this particle always takes the preterite form of the verb, and not the future, even though the future is meant: *a-kale aw-otot* erg2sg-make erg2sg-house 'you made your house'. *el-a-kale aw-otot* now neg.future-erg2sg-make erg2sg-house 'you won't make another house'. *x-aw-abi-n sermon* future-erg2sg-hear-future 'you will hear the sermon'. *el-aw-ubi axki pehk'ahel* neg.future-erg2sg-hear bad words 'don't listen to bad words' or 'you won't hear bad words'. It is improper to say *el-aw-ubi-n*, or *el-a-kale-n*; rather *el-a-kale*—which is the same as saying *x-a-kale-n*. When the particle *n* is used, it is wrong to add the final *-n* of the future.]

Finally, we should note that for intransitives, passives, and other verbs with a single argument, the old optative *-ik* (< Common Mayan **-ok*) was added, as *pakxi* 'he returned' against *x-tali-k* 'he will come'.

The Shift from Classic Ch'olti'an to Colonial Ch'olti'

Up to this point, we have shown how Classic Ch'olti'an evolved from an earlier state. In this section we show how Classic Ch'olti'an became seventeenth-century Ch'olti'. The chief grammatical difference between the grammars of Classic Ch'olti'an and Ch'olti' is the difference between straight- and split-ergativity. Otherwise, the two languages are largely the same. In the briefest terms, Classic Ch'olti'an became seventeenth-century Ch'olti' when the progressive aspect displaced the present tense, thus becoming the incomplete aspect; the unmarked present became the unmarked complete. How this happened is explained below.

To understand how the progressive became the imperfective, we draw attention to Comrie's (1976: 98 ff.) observation that it is typologically common in languages of the world for the progressive and the incomplete to be tightly related, and even for the progressive to take over the incomplete aspect. "In Irish this Progressive contrasts with a non-Progressive Present, while in Scots Gaelic the original progressive form . . . has become an Imperfective" (Comrie 1976: 100). The same can be said of Mayan languages—that the progressive exercised massive influence on the present/incomplete (see Robertson 1992: 222). In the case of Ch'olti', we assert, the progressive took the place of the Classic Ch'olti'an present, which gave rise to the split-ergativity found in Ch'olti' and other Lowland languages.

Comrie also makes the point that "in many languages, belonging to various genetic and geographical groupings, there is similarity between the formal expression of imperfective aspect, especially progressive aspect, and various locative adverbial phrases" (1976: 98). More specifically, he says that "the basic characteristic of this form of expression is that, in order to say 'he is working', a paraphrase of the type 'he is in/at work(ing)' is used" (1976: 99). The progressive of Common Mayan indeed had a phrasal locative referred to by Comrie, along with other syntactic phenomena that resulted in a logically consistent syntactic outcome. The Kaqchikel progressive, for example, has the above-mentioned locative in the syntactic sequence *y-i-tajin Juan chi war-am* incomplete-abs1sg-on.going to/at sleep-nominalizer, 'John is sleeping'. A more literal translation might be, very roughly, 'I am on-going at sleep'.

Before giving the details of the Mayan progressive aspect, we note another universal tendency related to Comrie's observations. In many geographically and genetically unrelated languages, a relationship usually exists between the incomplete-present and the nominative/accusative on the one hand, and the complete-past and the ergative/absolutive on the other (Comrie 1978; Dixon 1979; Hopper and Thompson 1980). That is, those languages that have split-ergativity correlate the incomplete aspect (or present tense) with the nominative-accusative case and the complete aspect (or past tense) with the ergative-absolutive case.

Figure 10.8 shows that in the nominative case any distinction between the subject of the intransitive and the agent of the transitive is neutralized; and for the absolutive case, the distinction between the subject of intransitive and the patient of transitive is neutralized. That is, the *he* of 'he sneezed', (subject of intransitive) and 'he saved me', (agent of the transitive) are in the nominative case; the *me* of 'he saved me' is in the accusative because it is the patient of the transitive. The absolutive, however, is seen to have neutralized

Subject	Agent
NOMINATIVE	
Patient	
ACCUSATIVE	

Subject	Patient
ABSOLUTIVE	
Agent	
ERGATIVE	

Figure 10.8

the subject of the intransitive and the patient of the transitive; the agent of the transitive is in the ergative. Thus, in Ch'olti', the *en* of *tali en* 'I went', and *u-col en* 'he saved me', is absolutive. The *u-* of *u-col en* 'he saved me' is ergative.

We conclude by suggesting that the impetus for the shift from Classic Ch'olti'an to seventeenth-century Ch'olti' is apparently grounded in several typological processes. First, the progressive tends to influence or even take over the incomplete (e.g., Celtic and in some Mayan languages). Second, the progressive tends to take a locative marker. Third, the incomplete/present tends to be correlated with the opposition nominative/accusative and complete/past with the ergative/absolutive. Finally, syntactic systems tend to become morphological systems and not the reverse (Sapir 1921: 112 ff.).

In what follows, we trace a shift in the progressive from a complicated syntactic system (Stage I, e.g., Common Mayan, Kaqchikel) to a simpler syntactic system (Stage II, e.g., Classic Ch'olti'an, Q'anjob'alan), and finally to a morphological, split-ergative system (Stage III, e.g., seventeenth-century Ch'olti'an, Ch'ol, Yukatek). The *nominative/accusative* distribution of pronominals plays a critical role in all three stages. In Stage I, the nominative/accusative opposition is restricted to the progressive, with a strictly syntactic focus, while the ergative/absolutive pronominal distribution marks both the complete and incomplete. In Stage II, the nominative/accusative opposition is still restricted to the progressive, but the nominative (subject of the intransitive and the agent of the transitive) is marked with the ergative pronoun, and the accusative (object of the transitive) is marked with the absolutive. Finally, in Stage III, true split-ergativity obtains, and the progressive takes over the present/imperfective. In the incomplete, the ergative marks nominative (agent of the transitive and subject of the intransitive) and the absolutive marks the accusative (patient of the transitive); in the complete the ergative marks the ergative (subject of the transitive), and the absolutive marks the absolutive (subject of the intransitive and patient of the transitive). We preview the three Stages in Figure 10.9.

	Progressive	Present/Incomplete	Past/Complete
Stage I:	Nom/Acc Syntactic	Erg/Abs Morphological	Erg/Abs Morphological
Stage II:	Nom/Acc Morpho-Syntactic	Erg/Abs Morphological	Erg/Abs Morphological
Stage III:	Nom/Acc Morphological	Nom/Acc Morphological	Erg/Abs Morphological

Figure 10.9

Stage I: Syntactic Complexity in Common Mayan

In Common Mayan, the nominative/accusative was central to the syntactic structuring of the progressive aspect, while the incomplete and complete took the ergative/absolutive pronominal distribution. In other words, it was not in the incomplete but in the progressive where the opposition nominative/accusative figured prominently (Figure 10.10).

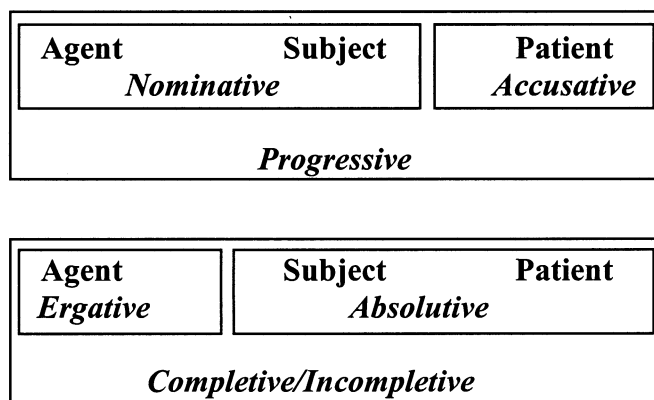


Figure 10.10

The state of affairs shown in Figure 10.10—reconstructible to Common Mayan—is preserved in Kaqchikel: *q-oj-war*, incomplete-abs1pl-sleep, ‘we sleep’; *x-oj-war*, complete-abs1pl-sleep, ‘we slept’; *q-oj-ru-ch’ey*, incomplete-abs1pl-erg3sg-hit, ‘he hits us’; *x-oj-ru-ch’ey*, complete-abs1pl-erg3sg-hit, ‘he hit us’. These sentences exhibit the complete/incomplete opposition within a system of straight ergativity, with no hint of the nominative/accusative and split-ergativity found in the lowland languages. To put this another way, the subject of the intransitive and the object of the transitive take the absolutive pronoun, and the agent of the transitive takes the ergative pronoun in both the incomplete and complete aspects.

In contrast, the progressive involves a complex syntactic construction, which includes nominative/accusative syntax, as well as a prepositional locative, both of which are typologically common (see above). Again, Kaqchikel approximates the Common Mayan structure: *y-oj-tajin chi war-am*, incomplete-abs1pl-on.going at sleep-nominalizer, ‘we are sleeping’; *y-oj-tajin ch-u-k’ayi-x-ik*, incomplete-abs1pl-on.going at-erg3sg-sell-passive-nominalizer, ‘we are selling it’.

The logical structure and the derivation of the progressive is shown in Figure 10.11. It is significant that both the subject of the intransitive and the agent of the transitive (nominative) are raised to function as the subject of the main verb, whereas the patient of the transitive (accusative) remains untouched. This is in keeping with the universal predilection for the incomplete (in this instance the progressive) to involve nominative/accusative case marking. It is further significant that the prepositional “locative” is a part of the syntactic construction and that a nominalized verb is its prepositional object. The syntax of the progressive matches exactly constructions like “we go to our house,” as shown in Figure 10.12.²⁰²

202. Earlier stages of the English progressive seem to have a similar syntactic construct: ‘I am at going’. We can still hear dialectal or colloquial preservations, as in ‘I’m a-goin’’. Note that such constructions

	<i>Main Verb</i>		<i>Dependent Verb</i>		<i>Main Verb</i>		<i>Dependent Verb</i>
Description:	on.going		<u>subject</u> intransitive		on.going		<u>agent</u> patient transitive
Raise:	on.going <u>subject</u>		intrans		on.going <u>agent</u>		patient trans
Passivize:							patient trans+pass
Preposition:		prep				prep	
Nominalize:			intrans+nom				patient trans+pass+nom
Mark Case:	on.going subj [abs]				on.going subj [abs]		patient trans+pass+nom [erg]
Derived:	y- <i>oj</i> - <i>tajin</i>	chi	war-am		y- <i>oj</i> - <i>tajin</i>	ch-	u-k'- <i>ayi</i> -x-ik
	'we are sleeping'				'we are selling it'		

Figure 10.11

y- <i>oj</i> - <i>tajin</i> inc-abs1pl-on.going	ch- preposition	u-k'- <i>ayi</i> -x-ik erg3sg-sell-passive-nominalizer
'we are selling it' lit. we.are at its.being.sold		
y- <i>oj</i> - <i>b'e</i> inc-abs1pl-go	chi- preposition	r- <i>achoch</i> erg3sg-house
'we go to his house'		

Figure 10.12

Stage II: Reduction in Syntactic Complexity of Classic Ch'olti'an

On the way to becoming split-ergative languages, the lowland languages simplified the syntactic complexity of the progressive, as shown above. Rather than saying 'I [am] ongoing at sleep', and 'I [am] ongoing at its-being-sold' (Stage I), the construction became less syntactic. A rough translation would be 'ongoing is my sleep', for intransitives, and simply 'ongoing we sell it' (Stage II). Q'anjob'al is a language where this intermediate stage is found: *laan in-way-i*, ongoing erg1sg-sleep-affix, 'I am sleeping'; *laan ach-ko-maq'on-i*, ongoing abs2-erg1pl-hit 'we are hitting you' (Figure 10.13).²⁰³

The difference between the typology represented by Q'anjob'al and a genuinely split-ergative language shown in Figure 10.13 is that, in the incomplete, Q'anjob'al retains straight ergativity: *ch-on-way-i*, incomplete-abs1pl-sleep-aff, 'We sleep,' *ch-ach-k-mak'-a'*, incomplete-abs2sg-erg1pl-hit-aff, 'we hit you'. That is, the progressive marks the nominative (intransitive subject and transitive agent) with the ergative pronoun and the

are themselves reflective of standard syntactic constructions: 'I am at home', and 'I am at going'. Note that the progressive went from a strongly syntactic construction to a more morphological construction, as 'I am at going' to 'I'm a-going', to 'I'm going'.

203. This same construction is found in all Q'anjob'alan languages.

	Main Verb	Dependent Verb	Main Verb	Dependent Verb
Description:	on.going	subject intransitive	on.going	agent patient transitive
Mark Case:		ko-way-i [erg]		patient agent transitive [abs] [erg]
Derived:	laan	ko-way-i	laan	ach-ko-maq'-oni
	'we are sleeping'		'we hit you'	

Figure 10.13

accusative (patient of the transitive) with the absolutive. In contrast, the incompletive marks the absolutive (intransitive subject and the transitive patient) with the absolutive, and the ergative (transitive agent) with the ergative. This is clearly a much simpler syntactic system than the Common Mayan system shown above. In this case the transitive verb is no longer passivized, since it “owns” its own agent. The intransitives, however, are the subjects of the higher verb: ‘my-sleeping is ongoing’. Formally, the dependent clause is nominalized and possessed. Without raising and consequent passivization, the system is syntactically simpler—it is closer to a strictly morphological/inflectional system. This simplification is necessary to what will give rise to the split-ergative system of Stage III.

Although we do not have any attestation of the progressive in the hieroglyphic script, we are confident that the progressive was something like *ongoing erg-intransitive (e.g., **iyuwal u-tal-el*, ongoing erg3sg-come-aff, ‘he is coming’) and ongoing erg-transitive- V_1 absolutive (e.g., **iyuwal u-muk-uw et*, ongoing erg3sg-bury-transitive you, ‘he is burying you’).²⁰⁴ The present is well attested in *tal-i*, ‘he comes [from].’ Recall that tense is neutralized with transitive verbs: *u-tz’ap-aw*, erg3sg-placed-transitive.declarative, ‘he placed/ places it’.²⁰⁵

204. Classic-era inscriptions do record explicit spellings of *iyuwal*, the ancestor of Ch’olti’ *yual* and Acalan *yuual*. The best examples of this rare expression come from Copan Stela J, dating to A.D. 702. This text makes it clear that *iyuwal* was, at this stage, an independent adverbial, since it could precede verbs and chronological notations without verbal morphology. Most likely, the adverbial, probably meaning ‘and now’, was later recruited to form the progressive. On Stela J the verbs include a rare passive that appears to be highly archaic, CVCtr-*xa*, as in K’AM-*ax*, ‘it is received’, *ma-ka-xa/u-TT* ‘hole’, ‘it is covered, the mouth of the hole’. One of the spellings at Copan records a variant form, ‘*i-yu-wa-ja-la*, as opposed to the more usual, ‘*i-yu-wa-la*. Our suspicion is that ‘*i*, which attaches to intransitive verbs, is prefixed to *yuwal*. Conceivably, the *y* is an excrescent glide, arising from the juxtaposition of ‘*i* and the ergative *u*. This would mean that the following root would be either *wal* or the more extended *wajal*. Significantly, Ch’ol (Aulie and Aulie 1978) has a temporal adverb, *wajali*, which means ‘in the past, some time ago’. There is also a form *wajalix*’ which means ‘it has been some time now’. One can imagine that the final -*i* is the past tense marker from Common Mayan *-*eer*, and the -*ix* marks recent past. If the past time markers were absent, and if the discourse marker ‘*i* were prefixed, the form would be the adverbial *i’i’wal[j]al*, with the right semantic reading, ‘and now . . .’. It should also be noted that the San Francisco dictionary of Yukatek Maya (Michelon 1976) has a form *uabi*, which means ‘pues, then’, another discourse marker. The form *uabil* means ‘apenas, just now’.

205. It is possible that a pre-Classic Ch’olti’an stage had **x-erg-CV₁C-V₁w* for the root transitives, and **x-erg-CVC(C)V-n* for the derived transitives in the incompletive. It is also possible that the -*n* of the derived transitives came from the influence of the progressive **iyuwal w-ila-n* ‘he is seeing it’ (See Robertson 1993 for how the progressive can partially or wholly influence the progressive). This would explain, how Ch’olti’ ended up with the form *x-inw-ila-n* ‘I will see it’ as a future maker.

Stage III: Further Reduction in Syntactic Complexity of Lowland Languages

If in Stage I the progressive was a highly developed syntactic construction, based on the nominative-accusative axis (raising of the intransitive subject and transitive agent), Stage II was a simplification as it moved closer to becoming a simple morphological system. Here, the progressive was a split-ergative since the nominative (intransitive subject and the transitive agent) was marked with ergative pronouns, and the accusative (transitive patient) was marked with absolutive pronouns. The incomplete/present in these typologies nonetheless preserved Common Mayan straight-ergativity. Stage III, however, has straight-ergativity only in the completive since the progressive with its nominative-accusative axis totally took over the present, yielding a true split-ergative system. Because the syntactic aspectual incomplete took over the present, the system once again was aspectual, the incomplete being the marked and the completive being the unmarked member. When the progressive finally took over the present, a true split-ergative system emerged since the nominative (subject of intransitive and agent of transitive) was marked with the ergative pronoun and the accusative (patient of transitive) with the absolutive. A further consequence of the progressive taking over the present is that verbal inflection moved once again to an aspectual system, where the incomplete (the old progressive) was now the marked aspect and the completive the unmarked.

Figure 10.14 shows the ultimate outcome of the formal simplification of the completive, where the original *-i* (from Common Mayan **-ik*), meaning ‘verbs with one argument’, was lost from the system, either by its incorporation into the stem, or by its elimination; it is noteworthy that evidence of this loss appears by the end of the Late Classic period (A.D. 780), on Ixkun Stela 2: C8, *’i-u-tu*, *’i-ut* as opposed to *’i-ut-i*. Classic Ch’olti’an *tal-i*, ‘to come [from]’, or *pakx-i*, ‘to return’, for example, simply incorporated the *-i* as part of the stem, as *tali* and *pakxi*. As for the suffixes *-wan-i* and *-Vy-i*, they were abridged to *-wan* and *-Vy* in the completive.

We also note that the two elements—*-i* ‘single-argument predicate’ and the *-iiy* ‘past’—likely fell together, yielding *-i*. There is a sense in which the simple *-wan*, ‘intransitive positional,’ and the *-Vy*, ‘medio-passive,’ beyond their original meanings, have become completive markers, since their historical present/incomplete counterparts were ‘decapitated’ by the advent of the progressive, which had CVC-*tal* and CVC-*el* as their forms. That is to say, since *-wan* and *-Vy* appear only in the completive, they have become ipso facto markers of the completive.

Problems with Alternative Views

Up to this point, we have presented a systematic view of the Classic Ch’olti’an tense/aspect system, showing its plausibility from the point of view of synchrony (as an account for the data found in the script), diachrony (as a logical, formal, and semantic descendant and ancestor of the languages that came before and after), and typology (as a smooth fit with other language typologies). What we aim to do in this last section is to show why previously held assumptions do not work synchronically, diachronically, typologically, or hieroglyphically.

	Progressive	Present/ Incomplete	Past/ Completive	
Classic Ch'olti'an	*iyuwal u-hul-el ^a 'he is coming'	hul-i 'he comes'	hul-iyy 'he came'	Intransi- tive
17th Century Ch'olti'		yual upacxiel 'I return'	pacxi 'I returned'	
Classic Ch'olti'an	*iyuwal u-t'ab'-el 'he is going up'	t'ab'-[a]y-i 'he goes up'	*t'ab'-[a]y-iyy 'he went up' (see k'a'-[a]y-iyy 'it ended')	-V1y Verbs
17th Century Ch'olti'		[yual] ut'ab'el 'he goes up'	t'ab'ay 'he went up'	
Classic Ch'olti'an	*iyuwal u-chum-tal 'he is sitting down'	chum-wan-i 'he sits down'	chum-wan-iyy 'he sat down'	Positionals
17th Century Ch'olti'		yual ucoital 'he sits down'	coiuan 'he sat down'	
Classic Ch'olti'an	*iyuwal u-pa-[h]-s- aj-el 'it is being uncovered [shown, opened]'	pa-[h]-s-aj 'it is uncovered'	*pa-[h]-s-[a]j-iyy 'it was uncovered' (see tzu-[h]-tz-[a]j- iyy, 'it was completed')	Passives
17th Century Ch'olti'		yual upaza[he]l 'it is uncovered'	pa[h]sa 'it was uncovered'	

^aWe would not totally dismiss the possibility that the locative progressive existed in Classic times. It is possible that the form was something like what is reported in Morán (1695): *jualen ti cazte* 'I am cutting (breaking) wood'.

Figure 10.14

ASSUMPTION 1: CLASSIC CH'OLTI'AN (OR THE SCRIPT LANGUAGE)
MUST BE A SPLIT-ERGATIVE LANGUAGE.

There is a long-held belief that the language of the script was a split-ergative language (e.g., MacLeod 1982: 420–21; Bricker 1986: 125–26). This is a plausible and natural expectation, given the fact that all the attested Ch'olan and Yukatekan languages have split-ergativity. A good example of the belief the script is split-ergative at heart is Andrew Hofling's response to Houston et al. (2000), in which he states: "in all extant Ch'olan and Yukatekan languages, incomplete intransitive verbs take Set A (ergative) pronouns and are thus split-ergative . . . and many researchers believe that the Mayan script was similarly split-ergative" (Hofling 2000: 340). His proposal (following Mora-Marín 1998) is that the -WA glyph marks the antipassive and the ergative prefix identifies it as split-ergative. As Houston et al. (2000: 348) counter, the only way that the sequence ERG-Verb-WA Patient Agent could be an antipassive is with object incorporation. But the object is occasionally possessed, and no known Mayan language can incorporate the object into the verb if the object is specified in any way. Furthermore, since in the attested languages,

the incomplete verb comes from the progressive, where the verb was historically nominalized with -*VI* (typically -*el*), one would expect to find such an element on the verb—not -*WA*. It is typologically and epigraphically implausible, if not impossible, to believe that the -*WA* signaled an antipassive in these contexts. Another proposal for split-ergativity is that of Josserand et al. (1985), who see the *u-b'aah* glyph as a split-ergative form of the verb 'to go'. Houston and Stuart (1998: 81), however, give strong evidence that expressions like *u-baa(h) ti-ak'ta/ak'oot* mean something radically different: '[it is] his self/person/image in [the act of] dance'. Furthermore, since split-ergatives come from the progressive, the nominalized -*VI* ending would be expected if *b'aah* were really a verb.

ASSUMPTION 2: CLASSIC-PERIOD DISCOURSE MUST BE IN THE COMPLETIVE ASPECT ONLY.

One of Wald's (2000c: 149) concerns regarding the analysis presented in this paper is "inconsistency with the aspectual and temporal patterns evident in historical narratives writing in the colonial period in closely related languages." That is, according to Wald, the historical type of narration in the script *requires* the use of the completive aspect, since the events referred to are not in the present. "Incomplete aspect was rare because it was not appropriate" (Wald 1997b: 94).

We have already shown above the possibility of using the present tense in exactly the way that Wald says is implausible. Andersen (1994: 253) makes the point that in Lulubo "distribution of the perfective [past] and imperfective [present] clauses is strangely different from Moru" in the sense that the main events on the event line are described with the present tense, unlike Moru, where such events are described with the completive. In other words, the kinds of events described by Wald that occur in the hieroglyphic text are found in the *unmarked present* in Lulubo, and the kinds of events described in Wald's "deictic past" are precisely those that occur in the past in Lulubo. In a Lulubo narration every verb is in the present form, except for an event marked with the past tense: "This clause describes an event which occurred prior to the events described by the preceding clauses" (Andersen 1994: 254). Andersen's description is almost identical to Wald's (1997b: 90): "The narrator has shifted to a position of looking back upon the event as having already been narrated." The difference, of course, is that Andersen does not claim (a) that there is no imperfect (present), (b) that the unmarked verb is in the perfect, and (c) that the marked verb is somehow outside the imperfect/perfect system as a deictic marker. Andersen rightly claims (a) that there is a present tense, which is unmarked, and (b) that the marked verb is the past tense.

Elsewhere, Wald (2000c: 150) explicitly states that the "incomplete status markers have not been securely identified in the Classic period inscriptions," because of "the discourse patterns typical of the historical narrative genre within which the texts were written." We see this as implausible. First, it is simply not factual that colonial documents of any type, historical or otherwise, exclude the incomplete. The briefest look at the Paxbolon papers, for example, reveals that the incomplete is very well attested. Furthermore, the breadth and depth of the hieroglyphic corpus, probably in excess of 15,000 texts (including those on potsherds), make it inconceivable that the writing system would so utterly underrepresent one of the most basic oppositions in grammar: the completive/incomplete, or, as we have proposed, the present/past. Any corpus of such magnitude cannot, we believe, dodge this basic grammatical opposition.

An example illustrates a difficult empirical problem with Wald's claim that the incomplete does not occur in the script. When adverbs of time are combined with verbal aspect or tense, the same markedness relationships occur that are found in Figure 10.3. That is, past time naturally occurs with the completive aspect (or past tense), and nonpast time goes with the incomplete aspect (or present tense). Furthermore, the other two possibilities—past with incomplete (or present) and nonpast with completive (or past)—are not possible, or at most, they would be highly marked. In other words, one might say 'he died three days ago' and 'he is dying right now', but not 'he died right now' and 'he is dying yesterday'. Common Mayan would have had something like **kab'-ej-eer kam-ik*, two-days-past die-single.argument, 'two days ago he died', and **kab'-eej ka-kam-ik*, two-days incomplete-die-single.argument, 'two days from now he will die'. It would not, however, have sequences like **kab'-ej-eer ka-kam-ik*, two-days-past incomplete-die-single.argument, 'two days ago he dies', **kab'-eej kam-ik*, two-days die-single.argument, 'two days from now he died'. Thus, in modern Ch'orti one can say *chab'-i'* (<**chab'-ij-iiy*, two days-past) *yopa*, two.days.past arrived [here], 'two days ago he arrived', as well as *chab'-ij a-che-na e otot*, two-days incomp.3.sg-build-passive article house, 'two days from now the house will be [is] built'. But one cannot combine the nonpast with the completive: *chab'-ij che-na e otot*, two-days build-passive the house, 'two days from now the house was built'.²⁰⁶ Nor is it possible to declare *chab'-i'* (<**chab'-ij-iiy*, two days-past) *a-yopa*, two-days.ago incomp-arrive[here]-irrealis, 'two days ago he comes'.²⁰⁷

If it is true that the nonpast form NUMERAL+DAY requires the following verb to be in incomplete (or present), we have only to find instances of this form in the script and look for the verb that follows to find a sample of the incomplete. Such a form is found in a Classic Maya text from the area of Tortuguero, Mexico (Stuart et al. 1999b: 34): **CHA-b'i-ji/K'AL-AJ-[TUUN-ni]**, *chab'-ij k'a(h)l-aj tuun*, 'in two days the stone is "wrapped"' (Tortuguero Wooden Box: A2–B2). If Classic Ch'olti'an had a split-ergative, a form including **ERG...-el** would necessarily have shown up here, just as any other Mayan language would require the incomplete (whatever its form, split-ergative or straight-ergative) in this syntactic frame. What we find contradicts Assumptions 1 and 2 that the script language must be split-ergative and that all texts are in the completive. Rather, this example, of Late Classic date, is *not* a split-ergative form, and it is precisely the form we propose for the present tense—the unmarked form of the verb. The results of this "test" are as certain as the results of investigating the English syntactic frame 'the entire pie was EAT by Sandy', where the participial *eaten* (and not *eating*, for example) would emerge as the only plausible form. The differences between the approaches are diagrammed in Figure 10.15.

206. These data are taken from an elicitation session at the Mayan Workshop at Austin, Texas. The consultant was Lucas López, March 16, 1999. Most of these citations are from Terrence Kaufman's elicitations.

207. It is important to note, however, that the combination past + incomplete (or present) is much more plausible than nonpast + completive. In languages of the world, it is fairly common for the incomplete aspect to occur in the past, as, for example, the so-called imperfective in Spanish: *hablaba* 'he was speaking'. It is possible in Ch'orti, for example, to say *chab'-i'* (<**chab'-ih-iiy* two days-past) *a-yopa ani*, two-days.ago incomp-arrive[here]-irrealis, 'two days ago he was going to come', if the irrealis marker is present. Otherwise, it does not make sense.

Lulubo Andersen	Classic Ch'olti'an Robertson, Houston, Stuart	Script Wald
Present	Present (Ø)	Incompletive (iyual ERG-Intrans) Spoken, not written; not attestable.
Past	Past (-iiy)	Completive (Ø)
Deictic	Deictic Past (-iiy)	Deictic Past (-iiy)

Figure 10.15

As discussed in detail above, it is possible for a deictic adverbial to retain its deictic function, even when it moves to become an inflected verbal category.

ASSUMPTION 3: EVIDENCE FROM HISTORICAL LINGUISTICS PROVES THE IMPLAUSIBILITY OF THE ROBERTSON, HOUSTON, AND STUART MODEL.

Wald (1997b: 72) rejects Ø as a marker of the incompletive (i.e., present) because it “necessitates the assumption of a number of unreconcilable breaks, reversals, or independent identical innovations in the morphological progression from proto-Mayan, through proto-Tzeltalan, on to Classic-period Ch'olan and finally to Colonial and Modern Ch'olan languages.” In other words, Wald assumes that our proposal (a) excludes the possibility of split-ergativity, which is the incompletive in the attested, colonial, and modern languages; (b) that our proposed unmarked incompletive would become the completive in colonial times.

As far as we know, the argument presented in this paper is the most thorough assessment of the changes through the several stages outlined above. The arguments presented thus far obviate the concerns set forth by Wald. Let us repeat them for the sake of clarity. First, it is our contention that linguistic evidence makes it unlikely that split-ergativity was a feature of Common Mayan, Common Wasteko-Ch'olan, or even Common Ch'olan. One can derive a Ch'ol or Ch'olti' or even Yukatekan split-ergative system from the progressive system as outlined above. It would be impossible, however, to derive a progressive system from a split-ergative system. We are making the direct claim that split-ergativity, where the progressive took over the present/incompletive, happened sometime after the language was recorded in the script. Indeed, even a casual look at Ch'olti' reveals a language whose split-ergativity correlates with the progressive (*yual u-tal-el*, ‘he is coming now’), as compared to Acalan, which no longer even requires *iuat*: *u-tal-el*, ‘he is coming’; *iuat* is now a discourse marker, totally separated from the construction described in Stage II (Figure 10.12). Ch'ol has an inflectional system that is substantially further developed. A careful comparatist could safely assert that, given the various stages of development of Ch'olan's system of split-ergativity, Ch'ol acquired it first (likely borrowed from the highly developed system in Yukatekan), Chontal second, and Ch'olti' last—*after* Classic Ch'olti'an was recorded. Indeed, if one looks carefully at the claims for split-ergativity in Classic Ch'olti'an, there is nothing to support the claim beyond this premise: that Classic Ch'olti'an (or the script language) had it because relevant modern languages do. But there is nothing to warrant such a premise. In the face of the evidence presented above, we feel that, contrary to Wald's claim, our explanation of the emergence of split-

ergativity fully partakes of “well-documented conclusions of historical linguistics” (Wald 1997b).

Second, the supposition that the incompletive (present tense) was the unmarked inflection in Classic times, but that the completive was the unmarked inflection in colonial times does not contradict reasonable historical conclusions. As pointed out, it is typologically true that the present is the unmarked tense, while the completive is the unmarked aspect. We further demonstrated that all the necessary elements were systematically present in Common Mayan for the adverbial tense system: present (or, perhaps better, non-past, $\emptyset$) and past (*iiy*) took over the previous aspectual system, consisting of the incompletive (x , which became a future marker) and the completive ($\emptyset$). That such a phenomenon is typologically possible is made inescapably clear in Andersen (1994)—not to mention the fact that a similar change is generally accepted to have happened as languages diverged from proto-Indo-European (Comrie 1976: 120–21).

Finally, that the progressive *can* take over the incompletive is typologically conceivable given that it has happened in Celtic and other languages, and has been richly documented by Robertson (1992, 1993) for many Mayan languages. It is also true that the nominative/accusative functionally belongs with the progressive/incompletive/present inflectional morphology, while the ergative/absolutive belongs with the completive aspect. The three stages of development attest to the mode of gradual development of split-ergativity in the Mayan languages.

Although the details of this shift from conservative to innovative go beyond the scope of this paper (see Robertson 1980, 1992, 1993), we can see evidence of a somewhat comparable shift in English. While standard English has ‘he’s going to town’, it is still possible to attest ‘he’s a-goin’ to town’, which comes from the historical ‘he’s at/on going to town’ (Williams 1975: 265). In Mayan it is the innovative form—‘ongoing my sleeping’, which has moved closer to the incompletive with the loss of certain syntactic complexities (raising, passivization)—that eventually takes over the incompletive, as attested in Ch’olti’, Cholan, Ch’ol, premodern Wastek, and Yukatekan. With this replacement came split-ergativity.

In sum, everything we propose by way of historical change is wholly acceptable from a diachronic and typological point of view. Other languages have undergone the types of changes outlined above, so why should Mayan not be subject to these same kinds of typological changes?

ASSUMPTION 4. A DEICTIC OF THE FORM -IJIY (OFTEN WITH VARIABLE, ABBREVIATED SPELLINGS) OCCURS THROUGHOUT THE INSCRIPTIONS, ATTACHED TO VERBS IN THE COMPLETIVE ASPECT.

Wald, partly in collaboration with MacLeod, develops the argument that a “past deictic clitic” (Wald and MacLeod 1999: 88) occurs in the glyphic texts, variously spelled *-iy*, *-ij*, *-iji*, *-ijiy*, *-ji*, and *-jiy*. He suggests that this element corresponds exactly to the *-ihi* documented in the Paxbalon Maldonado papers (Scholes and Roys 1968; Smailus 1975), an important series of texts in Acalan Chontal that do indeed employ the clitic in reference to past narrative time or other matters of deixis (e.g., Smailus 1975: 33, 142, 145, 202–3) (See below for a discussion of *-i* versus *-ihi*.) From glyphic usage, it would appear to Wald

that this particle also attaches to “transitive verbs . . . for back reference” (Wald and MacLeod 1999: 90). Wald does not acknowledge that disharmony produces a complex vowel in the final element, but he does connect these elements to the temporal clitics that descend from Common Mayan *-ej-eer* (see above; Wald and MacLeod 1999: 89).

There are several questions raised by this interpretation that must be pried apart and treated separately. First, how likely is it that Maya scribes would always intend *-ijiy* but variably spell *-iji*, *-ijiy*, *-ji*, *-jiy*, and *-iy*? In favor of Wald’s view, there are a number of late, variant texts that overrepresent *ji* and *ya*, suggesting an emphasis on a full form, *-ijiy* (e.g., Copan Altar F’, *jo-JOY-ji-ji-ya*, or the Tortuguero Box, *OCH-b’i-ji-ji-ya* [Wald and MacLeod 1999: 91]). But these are so rare as to suggest hypertrophied spellings. The example from Copan should alert us to this possibility because it also contains an unprecedented *u-ti-ji*, a bizarre and inexplicable version of the root *ut* ‘happen’. In any case, the extra *ji* on *och-b’ih* above may have less to do with an extended deictic spelling than with the aspirate that often attaches to the final element: the term for ‘road’, *b’i(h)* (cf. Piedras Negras Stela 1: C19, *OCH-b’i-hi*, or Piedras Negras Altar 1: U2, *OCH-b’i-hi-AJ*). The other *j* undoubtedly refers to the syncopated form *j*, which derives from *-aj* (Stuart et al. 1999b: 28). It is well to remember the strikingly anomalous nature of this text. For this reason it seems imprudent to base a broad grammatical theory on this inscription.

In general, Wald’s proposal of orthographic looseness violates Maya consistency in such matters, and it would seem doubtful that two morphemes, *-ij-iy*, are variously rendered as *-iji*, *-ijiy*, *-ji*, *-jiy*, and *-iy*. The use of *-ij-iy* on numbers, which Wald apparently sees as involving the same elements, is consistent, never showing the variability that he suggests is the norm. In the text Wald cites from Copan, the numbers make rigid use of these elements, in total distinction to the verbs within the same text. The incongruity between two contexts purported to have *precisely* the same elements cannot be explained by his theory of orthographic imprecision. And if the *iji*, *-ijiy*, *-ji*, *-jiy*, and *-iy* are totally interchangeable, why do they never vary in this way on positional verbs or, excepting the single example from Copan, on root intransitives? A second, related point is that Wald conflates homophonic morphemes. In the glyphs, passive verbs such as *si[h]y-aj* (held by us to be in the present tense) and the syncopated form *si[h])y-j-iiy* (believed by us to yield the past tense) manifestly do not make use of the element descending from Common Mayan **-ej*, ‘time unit’ (see above). Rather, the *j* comes from an entirely different morpheme, *-aj*.

The blurring of the *-ya* particles raises the most difficult question of all: are the elements on *u-chu-ku-ya*, *u-CHAB’/KAB-IJ-ya*, or *yi-ILA-IJ* the same as those on *hu-li-ya* or *CHAMI-ya*? There is much that rides on this problem, for such “secondary expressions” are among the most common phrases in the glyphic corpus. In the vaguest terms, their meaning is more or less understood. They seem largely to record acts of supervision, agency, ratification, and witness, often by a socially superior person: an overlord validates an underling’s accession or a warrior takes ultimate credit for the capture of an enemy. Nonetheless, they have led to a good deal of epigraphic confusion. Most specialists have not recognized their underlying identity, and have seen them in varying ways, as anything from verbs to nominals. From our vantage, they fit tightly into a single structural set. An explanation for one must work for all.

“Secondary expressions” have the following attributes: (1) in most cases they occur after an initial verb/subject phrase, hence they are “secondary”; (2) they typically make

use of bisyllabic transitive roots, as opposed to the CVC roots found with the morphosyllable **WA** (only two exceptions are known to us, *chuk*, ‘grab, seize’, and *we* ‘eat’, which take reduced suffixation, exclusively *ya* [Stuart et al. 1999b: 36]); (3) they include four elements, an ergative pronoun, a bisyllabic verb root, and, depending on interpretation, two syllables or morphosyllables, **IJ** and/or *ya*; and (4) if transitive verbs, they behave strangely insofar as their objects are not immediately present. It typically occurs somewhere earlier in the discourse. A brief list of these secondary expressions would include: *xa-yu-UK’-IJ* *yi-ta-IJ*, *ya-la-IJ-ya*, *u-TZ’AK-b’u-IJ*, *u-CHAB’/KAB’-IJ-ya* (or *u-CHAB’/KAB’-ya*), *ya-ka-ta-IJ*, and *ya-ti-IJ*.²⁰⁸ In some cases the basic meanings of the roots are clear (*uk* ‘drink’; *ala* ‘say’; *tz’akb’u* ‘place in order’; *akta* ‘leave, drop’; *ati* related in some fashion to ‘bathe, water’; *chab’/kab’* or *chab’i/kab’i* ‘tend, supervise, manure’), in others less so (*ita*).

What is pivotal here is the nature of the **IJ** and *ya* signs that suffix these expressions. For Wald they spell the Acalan *-ijiy*, namely, a “past deictic clitic” (see above). The problem is chronological. Without exception, the earliest examples do *not* take the *ya*, which became common only in the Late Classic period (the earliest example with both **IJ** and *ya* occurs on Copan Stela 49: Cp3, well after 9.0.0.0.0 in the Maya Long Count). These late texts are also the only ones that can elide the **IJ**—early inscriptions show no such behavior. Another feature bears notice: when two such expressions are coupled in the Late Classic, as in *u-TZ’AK-b’u-IJ/u-CHAB’/KAB’-IJ-ya*, it is the second expression that takes the *ya*, not the first (e.g., Palenque Sacrophagus: 10–11; see also the Copan example above, in which the initial phrase takes a first-person pronoun, *ni-TZ’AK-b’u-IJ*, suggesting that the two pronouns [*u* and *u* or, as at Copan, *ni* and *u*] refer to different entities). Excepting the example from Copan, no such evidence comes from the Early Classic (e.g., Tikal Stela 31: D7–C8). In other words, a shift occurred halfway through the Classic period. One particle, *ya*, began gradually to appear, to the point of making the **IJ** optional in certain contexts.²⁰⁹ If the *-ijiy* were truly primordial, coming from Common Mayan **-ej-eer*, why would it only appear fully in *later* examples? Logically, the most basic form would occur early, and then show, perhaps, a degree of variability as elements dropped out through time.

Yet, it is not enough to identify possible orthographic and chronological problems with the *ij/ijiy* hypothesis: one must attempt a linguistic explanation that satisfactorily accounts for the glyphic spellings at hand.

Two Possible Explanations for the *ji* Suffix

Two explanations have been proposed. One is that the *ji* is a thematic marker for derived transitives, as proposed by Stephen Houston and David Stuart in October 1996, when Houston proposed in an e-mail to Stuart that

[a]pparently there are two kinds of active transitives in the inscriptions: (A) those involving a single syllable: *u-chok-wa*, *u-tz’ap-wa*, *u-hoch’-wa*, *y-il-wa*, etc.; (B) those ending in

208. Some of the rare forms include *xa-yu-UK’-IJ* (Tikal), *ya-la-IJ-ya* (relatively common on pottery text as a quotative expression), *ya-ka-ta-IJ* (Quirigua and Piedras Negras).

209. The **CHAB’/KAB’** root is problematic. There are hints from Tzotzil *chabi* ‘govern, guard, watch over’, an obvious cognate (Laughlin 1988, I: 184–85), that it may have imbedded an *-i*. Later, in the Late Classic, the logograph may have lost this particle, hence its treatment as a CVC transitive.

vowels and consisting of two syllables [all in set B occur in secondary positions]: *y-ita-hi*, *u-chabi-hi*, *y-ati-hi*, *u-tz'ak-bu-hi*, *u-pat-bu-hi*, etc.

Independently, Barbara MacLeod (this volume) has argued vigorously and effectively for the same thing: that the *-ji* is a thematic marker for derived transitives, like *-wa*. If this assessment is correct, we may have an explanation for the fact that the reflexes of **eey* are restricted to intransitives in Wastek and Ch'ol, but are more expansively present on all transitives in Acalan. There is the possibility that the script may be an open window on a stage of development reflecting how the *-iiy* spread from its initial adverbial deictic function to its ultimate state as reflected in Acalan. We propose several possible stages:

Stage I: The original state of affairs as found in Common Mayan (e.g., **ox-ej-eer* 'three days ago'; **ooN-eer* 'long ago').

Stage II: Reflexes of **eey* begin to be used as a deictic to signal past time with nouns (e.g., Tzendal: *utzoney* 'yo era bueno' versus *utzon* 'yo soy bueno' [Anonymous n.d.: 14]).

Stage III: Reflexes of **eey* begin to attach to verbs that take a single argument (e.g., Ch'ol [Aulie and Aulie 1978]: *tza' yajl-i i yotot* 'his house fell'; Wastek [Edmonson 1988: 560]: *wat-e-y* 'it passed'; Early Classic Ch'olti'an: *tz'ap-j-iiy* 'it was driven in').

Stage IV: Reflexes of **eey* begin to appear on derived transitives (e.g., Later Classic Ch'olti'an: *u-tz'akbu-ij-iiy* 'he arranged it').

Stage V: Reflex of **eey* not only takes over derived transitives but also displaces the original root transitive marker *-V₁w* as well (e.g., Acalan: *ucheli* 'he made it'; *uchectesi* 'he made it visible').

Thus, if Classic Ch'olti'an *ji* thematically marks derived transitives, then we might be seeing, from mid- to terminal-Classic times, the gradual beginnings of the *-iiy* moving from single argument predicates to transitive predicates, as outlined above. What happened to staunch the movement from intransitives to transitives is the advent of split-ergativity, as explained above. Hence, in Ch'olti', there is no legitimate distinction between completive and incompletive in transitive verbs.

A Second Possible Explanations for the *ji* Suffix

It is also possible that these "secondary expressions" are nominalized antipassives (NAPs), suffixed at first only with *-ij*, spelled with a morphosyllable, **-IJ**, and later augmented by *-ya*, spelled with the syllable **ya** (Houston et al. 2001).²¹⁰ They were inherently ambiguous with respect to agent and patient. English has examples of this, as in the phrase "the shooting of the hunters" (Chomsky 1957: 88). Without ancillary information, the reader cannot make out whether the hunters are dead or alive. Like *-ing* in English, Mayan NAPs do not supply such clues since with nominalization, transitive verbs

210. Alfonso Lacadena (personal communication, 2000) points out another example of a nominalized antipassive (Palenque Temple of the Inscriptions, West Tablet: J1-J3): **u-TZUTZ-ma-la u-XII-pi**, of which the first element must be *u-tzutuz-m-al*, perhaps 'its finishing', although the final particle, *-al*, may be adjectival. There may well be a correlate to this in Tzendal: *Nacmal*, *nacomal* 'enemigo', from the root transitive *nac* 'esconder, hablar contra', *atimal*: *aquella obra*; *gb-* 'el q se bana', from the root *atin* 'bañarse'.

It is possible that the Distance Number Introductory Glyph, **u-TZ'AK-AJ/a**, may also be a nominalized form, meaning 'their ordering, [the days]'.

tend to neutralize the distinction between agent and patient. The general sense of a statement is inferable from context and background information.²¹¹ Another striking characteristic of NAP markers in Mayan languages is their tendency to append suffixes, as in Kaqchikel *-y-om* (Rosales 1748: 62), Tzendal *-ogh-el/-agh-el* (Ara 1571), Tzeltal *-om-aj* (Dayley 1981: 43), and Akatek *-w-om*, to name a few. This same process could be happening through time in Classic Ch'olti'an, first *-ij*, followed by *-ij-ya*. It is also true that typically Mayan languages have more than one NAP, especially for derived transitives. Having *-ij*, *ya(j)* and their combination *-ij-ya(j)* would be no more unusual than Kaqchikel having *-Vy*, *-om* and their combination *-y-om*. In any case, these expressions have the earmarks of the additive process noted for NAP markers in many Mayan languages.

The two clitics, *-ij* and *-ya(j)*, have perfectly good etymologies as NAP markers. For example, root transitives in Tzendal (Colonial Tzeltal) commonly take *-ogh-el* (and rarely *-aw*, as in *nutz-aw*, 'he that runs or pursues') as their NAP endings.²¹² Yet, the derived transitives use *-egh* (e.g., *atay-egh*, 'counter', *olantase-egh*, 'waiter', *ulesa-egh*, 'founder', Ara 1571). The *-egh*, descending from **-eej* (length can be inferred from a Mocho nominalization, *wa'-s-eeh*, 'gasto, que comer', Kaufman n.d.: 175), corresponds readily to Classic Ch'olti'an *-ih* because of the Ch'olan change of **ee > ii*. We also note that while *egh* is the most common NAP, other forms ending in *gh* [j] are not far to seek. Consider, for example, *gh-munal-aghel*, *mun-ighel* 'tributario'; *gh-meba-aghel* 'triste'. This too may occur in glyphs: Yaxchilan Lintel 22: A3-B3, reads *yi-pi-ya-je-la*. The difference, of course, is innovative, Ch'olan *y* of *-yajeel*, compared to Tzendal *-ajel*. But otherwise, the lexical and morphological sequencing are the same. A noun root followed by the NAP are apparent in both languages: the noun *meba* 'orphan, poor', followed by the Tzendal suffix *-agh-el*, and the possessed noun *y-ip* 'his strength' followed by Ch'olan *-yaj-eel*.

The NAP *ya*, and its more conservative counterpart *yaj*, is apparently a Ch'olan innovation, since it is not found in any other Mayan subgroup. We point out that K'iche' has a NAP (V)y,²¹³ and that Yukatek has a NAP *-aj*,²¹⁴ and, closer to home, Tzendal has a version of it as shown above in *-agh-el*. It is plausible that the Ch'olan **yaj* goes back to a combination of these two NAPs, (V)y and *aj*, in light of the propensity of NAPs to combine with each other.

The Ch'olan variation of *ya* and *yaj* deserves some comment. The form *-yaj* is the NAP readily found in Ch'orti', for example, *ajkanseyaj* 'teacher', *iryaj* 'someone who sees'. Ch'olti' has a NAP marker *ia* [ya] and *ija* [iya] for *chohb*, as in *in-ch'ohbija* (or *in-ch'obeia*) *taba* 'my love for you'.²¹⁵ Acalan apparently has *ya*, for example, *atakayaobi* 'predicadores.' Chontal has *-yah*, and Ch'ol, *ya(h)*.²¹⁶ In the script, we have the above-

211. From collateral information, one would know, for example, that Boothe is the agent in "The True Story of Boothe's Assassination," and that Lincoln is the patient in "The True Story of Lincoln's Assassination," but *Jones* is ambiguous in "The True Story of Jones's Assassination." It is easy to imagine that the characters in the highly ritual, secondary verbal contexts were known to everyone belonging to the community.

212. The Tzendal *gh* is a velar fricative, which we represent as *j*.

213. Popol Wuj *q'ijil-oy* 'worshipper', or Sik'i-y, 'caller' (Allen Christenson, personal communication, 1999).

214. Thanks to Barbara MacLeod for pointing this out.

215. Note that Morán is capable of writing final *b*, but the form *ya* never occurs with one.

216. Thanks to Barbara MacLeod for these data.

mentioned *y-ip-yaj-eel*, as well as other forms of *y-ip-yaj* varying with *y-ip-ya*, found on royal names at sites like Copan, Quirigua, and Naranjo. The form *ijya*, however, is never realized as *ijyaj*. Such a reduction is not surprising, however, since many tightly bound forms tend to simplify phonologically, as in English, *day* [dey] dialectally becomes [diy] in the names of weekdays, and as in some dialects of English, *Friday* becomes [fray-diy]. Finally, we should point out that the hieroglyphic passive, *-[h]-...-aj* was realized in Ch'olti' as *-[h]-...-a* before silence, and as *-[h]-...-a(h)* before a vowel, whereas it is *-h-...a* in Ch'orti'. Final [j] can be lost in verbal morphology.

It should not escape our notice that the Yaxchilan bone, **U-MAY-ya-IJ/b'a-ki**, and the Tortuguero Box, **MAY-yi-IJ**, both spell the Ch'olti' substantive *maii* 'gift, offering, alms'. This provides reasonable evidence that the morphosyllable **IJ** really is a nominalizer, since the attested Ch'olti' nominal form, *mai'i*, is a perfect reflex of a Classic *mayV-ij*, first because of the form *VV > V'* in Ch'olan, second because double vowels in Ch'olti' is Morán's way of signaling vowel plus glottal stop, and third because final *j* is often lost, as was the case with the final *j* of the passive *-h-...aj* attested as *-h-...a* in Ch'orti'. Thus, just as Classic Ch'olti'an *chab-ij-iyy* 'two days ago' became Ch'orti' *chabi*, so *mayaij* 'gift' became *mayi* in Ch'olti' (with the subsequent loss of the final *j*).

These, then, are the formal reasons for seeing the *-ih*, *-ya*, or *-ih-ya* morphemes as NAPs. But certain functional reasons are also equally compelling. A formulaic pattern with two parts recurs in many Mayan languages: (1) Person A performs a ritual, and (2) Person B ratifies this action as A's witness. What is interesting is that there seems to be a linguistic correlate to this pattern, namely, that the transitive verb in the second part is nominalized as a NAP. A particular phrase of this kind is ambiguous with respect to whether Person B is the agent or the patient (e.g., Colonial Kaqchikel [Rosales 1748: 62] *loq'-o-iom* 'I am he that loves', or 'the beloved'). An example occurs in Ch'olti': . . . *ti acab to au-al t-a-nac. Natz-et ca-na Sta. María, bixi et av-il-oel Sta. Isabel* ' . . . in the night [metaphor, completed with 'in the womb'] still your son in your womb, you are our lady Holy Mary, you went to your charge [your seeing] Saint Elizabeth'. The Mayan interpretation would likely have been that Mary ritualistically came as a witness to Elizabeth's miraculous pregnancy with John the Baptist. In a literal sense, then: '[it is] your seeing of Saint Elizabeth'. But sometimes the Maya could remove ambiguity. See, for example, Tikal MT176, from Burial 196 (Wald and MacLeod 1999: 95): **ya-la-IJ-ya/tz'u-nu²/ti-ITZAMNAAH**, *y-ala-ij-ya tz'unun ti-itzamnaah*, '[it is] his saying, the hummingbird to Itzamnaah' (Houston and Stuart 1993). There is little doubt who is doing the talking. What has prevented a NAP interpretation is simply that the suffixes on *ala* are so close to the tense markers discussed before; this should not be a source of grave concern, as the glyphs exhibit many examples of homophones and flexible sign usage.

It should not escape our notice that certain constructions in the *Popol Wuj* (Christenson 2000) look very much like what we find in the script: (a) a secondary situation where the normal transitive relationships are not intact; (b) an ergative pronoun prefixed to an antipassive; (c) in a native text, apparently highly formalized in its rhetorical presentation, with virtually no European linguistic influence.²¹⁷

217. Notice that the form *achbila* is a derived transitive: *k-ix-q-achb'il-aj täj* 'we would accompany you (pl)'.²¹⁷

q'i' ri qa-mam ri q-achb'ila-n

Endure the our grandsons the accompany us. (p. 165)

ma-iw-älk'uwäl ri iw-achb'ila-n

Not your children that accompany you (pl)? (p. 166)

ta' x-r-il k'üt wuqüb' käqix ri mamä, ati't k-achb'ila-n k-ib'

Then he saw therefore Seven Macaw the grandfather, Grandmother accompanying each other. (p. 166)

ta' x-e-b'e k'üt

chila' ch-u-xe' chë'

q'än te' u-b'i',

k-achb'ila-n k'ü ri k-ätz

Then they went therefore

There below tree,

Yellow Tree its name,

To accompany therefore the their older.brother. (p. 210)

It is important to note that the hieroglyphic script has a highly structured rhetorical use of transitive verbs. The clear majority are root transitive in the passive voice. There are fewer root transitives in the active voice. By contrast, there are at best a handful of derived transitives in the passive voice, and given the NAP interpretation, no instances of derived transitives in the active voice. Another striking rhetorical stricture of the script regarding transitives is that only root transitives can occur in initial position, and by contrast, only derived transitives appear in secondary position. It is a fact of Mayan syntactic behavior that when two propositions are tightly linked, there is a remarkable tendency to nominalize, passivize, or antipassivize the verb in the second position. Examples are readily found in the *Paxbolon Papers* and in the *Popol Wuj*. It is plausible that the rhetorical-syntactic strictures mentioned above may have the kinds of consequences that fall under the NAP interpretation of *ij*. In any case, these several rhetorical constraints are unique to the script, and probably merit more careful attention than they have received heretofore.

We have presented two possible interpretations for the *ij* suffix, and both seem to have reasonable arguments to recommend them. The advantage of claiming *ij* to be a thematic marker for derived transitives is the fact that it is unusual not to find such an important member as a normally functioning verb class given the huge corpus. The disadvantage is that it is difficult to see its etymology and to find its descendent form in Ch'olti'an, or any other Ch'olan language, for that matter. The advantage of seeing it as a NAP is that it works, formally and functionally, and it is etymologically sound. We are not yet convinced that any argument has been made that brings closure to the question, although Stuart is persuaded by derived-transitive argumentation.

The Deictic *ihi* in Acalan and the Hieroglyphs

A particularly relevant distinction in the *Paxbolon Papers* goes back to Common Wasteko-Ch'olan and Common Mayan. Earlier, we pointed out that Common Mayan

had an adverbial tense system: *NUMERAL-TIME.UNIT-*eer*, as, for example, **ox-ej-*eer**, ‘three days ago.’ We also pointed out that **-e(e)j* was a suppletive form for ‘day’, and **-eer* meant ‘past time’. The reflex of **-eer*, written *-il-iy* in Acalan, expanded to attach to stative predication, and then to intransitives, and finally to transitives. We also note that like the K’iche’an *x-* discussed earlier, the Acalan *-i* can appear on parts of speech other than verbs, as, for example, *tu-21 u-kin-i u-1612 años* ‘el 21 día del mes julio de 1612 años’. Here, the word for ‘day’, *kin* takes *i* as a deictic marker of time-gone-by. In the following sentence, the name Chancel has the deictic *-i* attached to it because it is referring back to an earlier reference of his name in the previous sentence: *a-cathan-*ih-i* hain Chancel-*i* hain xach ahau* ‘ya he dicho esto Chancel esto a saber rey’.²¹⁸

With some rarity the form *-ih-i* (from **-ej-*eer**) can also be found in Acalan, where it does indeed have a deictic function: *cham-i on-*ih-i**, died-completive a.lot-deictic, ‘he died long ago.’²¹⁹ The morpheme boundary, which would have been *-ih-i*, -day-time.gone.by, ‘days ago’, has been lost, so that *-ih-i* became a simple marker meaning ‘prior to the referenced time’. *-Ihi* always appears with another marker of time, typically the prefix *a-* or the suffix *ix*.

In the example above, *-on-*ih-i** comes from the Common Mayan root form **ooN* ‘many/much’. In Common Mayan, the form was **ooN-*eer** as evidenced by K’iche’ *oj-*eer** and Ch’olti’ *on-i*. Acalan *on-*ih-i** had to have been an innovation since the morpheme for day, **eej*, was never in that slot. The reason that *on* was able to appear with *ih-i* (and not its original *i* < **eer*) was apparently because the morpheme boundary was lost, rendering the whole suffix *ih-i*.

On verbs, the newly minted deictic *ih-i* almost always appears with the verbal prefix *a-*, employed as a relative deixis marker: *a-ca-than-*ih-i** relative.deixis-abs1sg-speak-deictic, ‘I have mentioned it’. *A-* and *-ih-i* (or even *i*), when prefixed and suffixed to the verb, always give a sense of a perfect, where past time has a lingering effect on later time. There are eight examples that we have counted of this particular form (*a-ca-than-*ih-i**) in the *Paxbolon Papers*, and in every instance they have a sense of present perfect.

The third morpheme with which it is found is the suffix *ix*, referred to earlier as a marker of recent time. When used in conjunction with *ix*, *-ih-i* acts like a past perfect. That is, it seems to be a pluperfect, much like English *had*: *chum-van-*ih-i-ix**, sit-affix-deictic-deictic, ‘he had sat down’.²²⁰ The context of the sentence is roughly ‘[when] he had assumed the kingship, he heard the word of God’. All seem to have this function in the context of *ix*.²²¹

To close, we find Wald’s arguments to be stimulating yet, from our point of view, incorrect and even implausible. First, a corpus as complex and abundant as Mayan hiero-

218. We point out that the completive marker in Acalan is *i*, which descends from *-iiy*. As shown elsewhere a newly recruited aspect marker which was historically a deictic marker can retain a deictic function. In other words, we do not rule out the possibility that this could be a deictic marker on a NAP.

219. There is another form, similar to this: *ahau-on-*ih-ob-i** ‘hace mucho tiempo una vez reyes’. In this instance, the underlying representation would have been: *ahau-on-*ih-i-ob-i**, the *ihio* eliding to *ihob*. Another example can be found with *ih-i* attached to final *la*: *ca-caca-n-etla-*hi** ‘nosotros os buscamos’. Here *la-*ih-i** is reduced to *lahi*.

220. ‘To sit down’ in the *Paxbolon Papers* and in the script means ‘to be installed in political office’.

221. There are two instances when *-ih-i* does not co-occur with a second temporal marker: *hain-*ix bane pudz-*ih-i*** this-recent.past ? flee-deictic. In this instance, the *ix* is attached to *hain* ‘this one’. The only example that seems to have no supporting temporal deictic is *num-*ih-i** pass.by-deictic.

glyphs is highly unlikely to have ignored as fundamental a grammatical category as the incomplete (or present). Second, the script requires distinctions that Wald does not make. Glyphic evidence compels epigraphers to distinguish between the passive (-[h]...*aj* 'present'/'-*j-iiy* 'past'), the past (-*iiy*, 'past tense'), and the related temporal adverbial -*ij-iiy*, which comes from Common Mayan *-*ej-eer*. Diachronic and synchronic information from Acalan further dictate a distinction between the completive -*i* and the deictic -*ih*.

Conclusion

This paper has marshaled what we take to be decisive arguments against a variety of commonly held views, including some developed only in the last few years. We assert that the glyphs emphasize not aspect but a tense system recruited from deictic adverbs. This makes the present tense unmarked, the past marked, in a pattern consistent with the universal tendency found in tense/aspect marking. A systematic opposition exists between the past and present, both of which occur in the glyphs, contrary to a recent claim by Wald. Furthermore, the system has no evidence of split-ergativity. Rather, the relatively late introduction of split-ergativity led logically to subsequent changes that configured descendant languages, especially Ch'olti' and Ch'orti'. Plausible typological comparisons taken from far-ranging examples explain and elucidate these changes. In sum, the data presented here have met the comparatists' challenge of showing how an ancestral system might result in descendant forms, including one attested over 1200 years ago in the Maya glyphs.

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ELEVEN

A World in a Grain of Sand

Transitive Perfect Verbs in the Classic Maya Script

BARBARA MACLEOD

Independent Scholar

Even when, in the distant future, the meanings of nearly all glyphic elements are known, there will ever be a certain looseness in translation, and for many short passages alternative renderings will always be possible; the translator will have to select from several choices the meaning which will best fit the context. This, really, is not discouraging, for our ultimate objective is not the literal word-for-word decipherment of the glyphs, but a fuller comprehension of the mentality, the poetic concepts, and the philosophical outlook of the Maya. That objective can be achieved even if we hesitate between two related interpretations of the difficult passage.

—J. Eric S. Thompson
Maya Hieroglyphic Writing

Introduction

The last two decades have borne witness to so many advances in the decipherment of Maya writing that Sir Eric Thompson's "distant future" is upon us. When we imagine our own future, we expect its scholars to remember our present as a time of major breakthrough. Amid many other refinements, our linguistic methodologies and discoveries have moved us beyond a willingness to accept "a certain looseness in translation"—moved us, in fact, toward the goal of a literal word-for-word decipherment. If we still hesitate between two related interpretations of difficult passages, it is because we have not yet grasped the structural subtlety of those passages. There can be no doubt that the language of Classic Maya texts had a grammatical integrity as absolute as that of any spoken Mayan language. But one might, in the manner of Thompson, ask whether it matters that we split hairs over script grammar. The answer is: no, if we seek a mere sketch, a roll of deeds and protagonists, but yes, if we truly want "a fuller comprehension of the mentality, the poetic concepts, and the philosophical outlook of the Maya."

Decipherment involves ongoing reexamination of texts and reevaluation of prior research; thus, we are continuously sifting those sands for new grains of insight. Several of the forms now best understood as root or derived transitives have been scrutinized and reinterpreted multiple times over the last twenty years. For example, the **u-CHAB'-ji(-ya)**

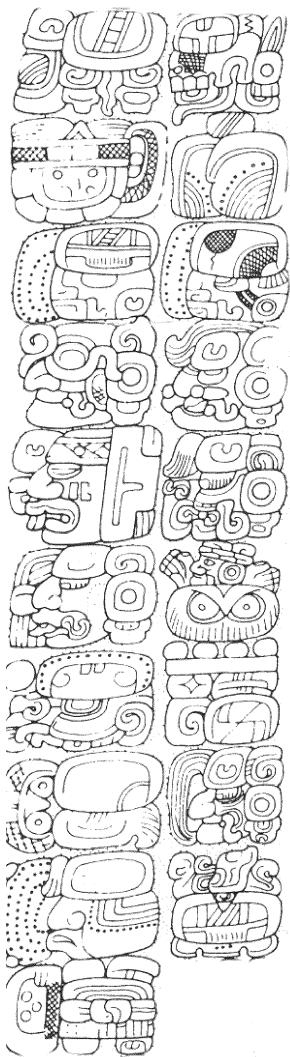


Figure 11.1. **a-LAY-ya-la UHT-ti TAN-LAM-ja JUN-PIK K'UH/CH'UH-KA'AN/CHAN K'UH/CH'UH KAB'/CHAB'** "Paddlers," etc. *alay uht-i-Ø tanlam-aj jun-pik-Ø k'uh chan k'uh kab'* etc. 'here it happened, they half-diminished one "bak'tun" (incorporated noun?), sky gods, earth gods, "the Paddlers," etc.; **u-CHAB'/KAB'-ji** (Nominal Phrase of *Siyaj Chan K'awiil*), *u-chab'-ij-Ø* (*Siyaj Chan K'awiil k'ujul mutal? ajaw*) 'he has overseen it, *Siyaj Chan K'awiil*, Holy Bound Hair (Tikal) Lord' (Tikal, St. 31, A8–A17; after Harrison 1999: fig. 35).

collocation (or possibly **KAB'-ji-(ya)** depending on which of these cognate forms was present in Classic Ch'olan) was once read [*u-kab'*] '(in) the territory/land of' (Schele 1985). But it has, after several intermediate readings, received consensus about its root and general meaning (Stuart et al. 1999b). There are other current interpretations of its morphology and precise syntactic function (Wald 2000c and this volume; Robertson et al., this volume), but to date a full explanation of the relevant data has not been presented, nor has agreement been reached concerning its grammatical identity. This paper presents the argument that **u-CHAB'/KAB'-ji-(ya)**—hereafter cited with the root **CHAB'** 'govern' or 'oversee' following Stuart et al.—belongs to a set of derived transitive verbs in perfect active status marked with a suffix **-VVj* (from ***-V-ej*) that originated as perfect participles. I regard the suffix on them as cognate with that found on both gerunds and inflected perfect verbs in Tzeltalan and Tojolab'al. While a "certain looseness" has been employed by some Mayanists in translating these forms as transitives, it is appropriate that this be demonstrated. Furthermore, because these stems touch upon other points in the Classic verbal system, any discussion of their attributes inevitably ripples outward. Though their own

morpheme inventory is small, they are a "world in a grain of sand," because they offer a window onto broader linguistic issues and lead into endlessly branching corridors of discussion.

Due to their regular occurrence in noninitial position, Stuart et al. (1999) have labeled this set of forms "secondary verbs" (see Figures 11.1 and 11.2 for examples in context). Although that term has found common usage in the Maya epigraphic community and is appropriate for most—but not all—examples, I would prefer to call them "transitive perfect verbs" for reasons that will soon be transparent. Although many are based on derived transitive stems, some contain CVC transitive roots. Most of them have pronominal (zero-morpheme) objects that are co-referential with a preceding clause or sentence, but some do not, and are instead followed by their nominal objects. This latter feature is useful in establishing them as active verbs rather than gerunds, to which they are historically related. Furthermore, David Stuart (personal communication, 2000) has pointed out that one of these—typically spelled **ya-ti-ji**, **y-at-ij-Ø* and preceding the names of the "Paddler Gods"—is often in *initial* position in short texts associated with images of these gods,

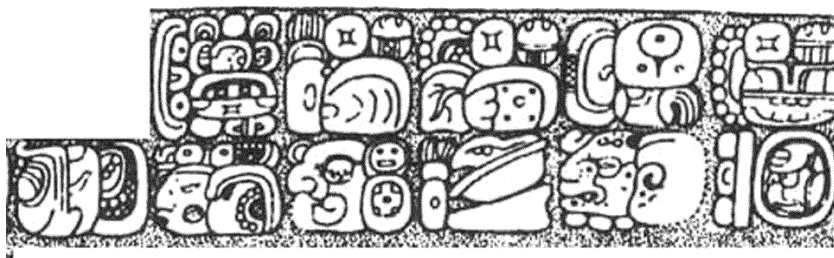


Figure 11.2. **TZUTZ-ja u-JUN-WINIKHA'AB' ti AJAW-le** (Nominal Phrase of Ruler 4 of Piedras Negras), *tzuh tz-aj-Ø u-jun-winikha'ab' ti ajawlel* (Nominal Phrase of Ruler 4, *k'uhul yokib' ajaw*) 'was completed his first "k'atun" in rulership, Ruler 4, Holy Lord of the Canyon Entrance (Piedras Negras)'; **yi-la-ji SAK**-"canoe"-**B'ALAM-? K'UHUL SIYAJ CHAN AJAW**, *y-il-aaj-Ø Sak-Jukub'?-Balam-? k'uhul siyaj chan ajaw* 'he has attended/witnessed it, White Canoe Jaguar-? Heaven-Born (Yaxchilan) Lord' (Piedras Negras Panel 3, F2-K1; after drawing by J. Montgomery.)

who, in turn, sit in cloud scrolls above the main pictorial register. This form is problematic in that *at(-i) is reconstructible as both a noun 'bath' and an intransitive verb 'take a bath' (Kaufman and Norman 1984). Mayan languages typically transitivize it with causative -s (Wichmann, personal communication, 2000).

John Robertson (in Stuart et al. 1999b and Robertson et al., this volume) has proposed that these secondary verbs are not active verbs but nominalized antipassives (NAPs) marked with a suffix *-ij or a sequence *-ij-yaj. I prefer to use the term "gerund" rather than "nominalized antipassive." Robertson and I corresponded at length for over two years about our agreements and differences, and in this volume Robertson et al. have reconsidered an earlier hypothesis that they are active verbs, along with a preferred NAP interpretation. In this paper I hope to present evidence that pushes the argument toward a full resolution. That said, it is not such a simple task.

Perfect Status in Mayan Languages

Kaufman and Norman (1984) and Kaufman (1989) regard all verbs in Mayan languages as being "always in some status or another." The status categories proposed by Kaufman for Mayan languages include plain, dependent, imperative, and perfect. Plain status corresponds to indicative mood in either incompletive or completive aspect, while dependent status applies to verbs in subordinate clauses. Imperative status corresponds to verbs in second person commands. Perfect status will be discussed in a moment. In Mayan, these statuses are marked by suffixes on the verb. Perfect and imperative status tend to occur without aspect prefixes. Plain and dependent status might have occurred with and without aspect particles in proto-Mayan.

The grammatical category "perfect" in English communicates a continuing result of an anterior event (Anderson 1982). Perhaps more important than the anterior event is its continuing or current relevance. Perfect verbs may thus be used in juxtaposition to other verbs to which a result of the first applies, as in "He had just left when I arrived," meaning I missed seeing him. The perfect may have an experiential function, as in "I have been to Mexico," or a result-state function as in "he has gone" or "he has eaten dinner" (Anderson 1982). These English uses of the perfect have close equivalents in Mayan

languages. But while English attaches tense to its perfect via the auxiliary verb “have”—as in “had gone,” “has gone,” “will have gone”—Mayan languages as a rule attach neither tense nor aspect to the active perfect. These languages also have perfect participles, and one of these, *o’om*, does refer to future states.

In this paper I propose that the Classic Maya writing system counterposes perfect status to plain status in sequences of two clauses in which the verb of the second clause (the “secondary verb”) is a transitive verb in active perfect status. These verbs are often derived transitives—that is, they originated grammatically as other types of roots, but root transitives occasionally participate in this pattern. These transitive verbs serve to communicate complex or politically charged actions such as ‘witness’, ‘oversee’, ‘set in order’, ‘accompany’, and their perfect status conveys an enduring result of the action. This enduring result is the glue that binds political alliances.

The Set of Script Derived Transitive Stems

One finds a dozen or more different stems belonging to this set. Several are unique and others are common. One, the ‘witness’ verb, has a variety of representations as well as related antipassive forms. The most common of these is considered briefly as a group. The verbs with derived or otherwise irregular stems are listed below (see also Figure 11.3) with the anterior deictic clitic suffix in parentheses (unless the form is not known to have it), and are transcribed and translated as derived transitive verbs in perfect status. These transcriptions are based on an underlying form *CVC-(C)-V-ej that I reconstruct as the Classic Ch’olan perfect for derived transitives. This is explained shortly, as well as my view that //*-V-ej// was realized and written as *-VVj.

ya-ti-ji-(ya)	y-at-iiĵ-Ø-(iiy)	‘he has/they have bathed it?’
ya-la-ji-ya	y-al-aaj-Ø-iiy	‘s/he has said it’
ya-ka-ta-ji-ya	y-ak-t-aaj-Ø-iiy	‘he has left (abdicated) it’
yi-ta-je		
yi-ta-ji-(ya)	y-it-aaj-Ø-(iiy)	‘s/he has accompanied him’
yi-la-ji		
yi-IL-ji		
yi-li-a-ji-(ya)	y-il-aaj-Ø-(iiy)	‘he has witnessed it’
yi-IL-la-ja	y-il-aj (short vowel)	‘he has witnessed it’
u-CHAB’-ji-(ya)	u-chab’-iiĵ-Ø-(iiy)	‘s/he has overseen it’
u-TZ’AK-b’u-ji-(ya)	u-tz’ak-b’-uuj-Ø-(iiy)	‘s/he has ordered it’
u-PAT-ta-b’u-ji	u-pat-b’-uuj-Ø	‘he has formed it’
yu-UXUL(?) -ji	y-u “carve” -iiĵ-Ø	‘he has carved it’

Of these, only the last example does not have an object specified in the preceding clause; rather, its object *k’an-tuun* follows. The whole may be *y-uxul?-iiĵ-Ø k’an-tuun* name ‘he has carved the sacred stone-name of sculptor’. The reading of the “lu-Bat” is problematic and at the moment, tangential. In any case I suspect that its derived stem ended in applicative *-i (Kaufman 1989), so that the perfect suffix *-ej became *-iiĵ. I believe that in



Fig. 11.3. The set of script derived transitive perfect verbs. (a) **ya-ti-ji** (Tonina M. 139 N-P; after drawing by P. Mathews); (b) **ya-la-ji-ya** (Tikal "Hummingbird Pot" from Burial 196; after drawing by W. R. Coe); (c) **ya-ka-ta-ji-ya** (Piedras Negras Throne 1, left leg, Z5; after drawing by J. Montgomery); (d) **yi-ta-je** (Chichen Itza, Temple of the Four Lintels, L. I, G4; after drawing by R. Krochock); (e) **yi-ta-ji** (Naj Tunich Drawing 88, D1; after drawing by A. Stone in Stone 1995: Fig. 7-3); (f) **yi-la-ji** (Piedras Negras Panel 3; after drawing by J. Montgomery); (g) **yi-IL-ji** (Naj Tunich Drawing 28, A3; after drawing by A. Stone in Stone 1995: Fig. 7-10); (h) **yi-li-a-ji** (Palenque, East Tablet of the Temple of the Inscriptions, M4; after a drawing by L. Schele); (i) **yi-IL-la-ja** (Waxaktun Stela 13, A4; after drawing by I. Graham, in Graham 1986: 163); (j) **u-CHAB'/KAB'-ji-ya** (Palenque, Sarcophagus Lid, 11; after drawing by M. G. Robertson); (k) **u-TZ'AK-b'u-ji** (Palenque, Sarcophagus Lid, 10; after drawing by M. G. Robertson); (l) **u-PAT-ta-b'u-ji** (after Stuart et al. 1999b: 2-32); (m) **yu-UXUL?-ji** (Palenque, Tablet of the 96 Glyphs, L4a; after drawing by L. Schele).

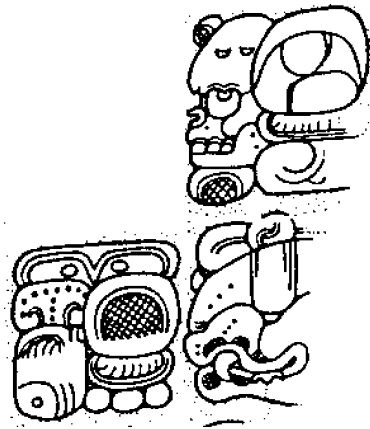


Fig. 11.4. **u-TZ'AK-ka-b'u u-to-k'a (u)-pa-ka-la JOY**
B'ALAM, *u-tz'ak-b'u-Ø u-to'k' u-pakal Joy Balam* (Yaxchilan
 Lintel 46, G7–G8; after drawing by I. Graham).

all cases, *-ej has assimilated to the preceding vowel, with resultant lengthening. I base my assumption about this on a pattern (*/*-o-ej// > *-ooj*) proposed for the Greater Tzeltalan perfect participle by Kaufman (1989 and his personal communication, 2000). It is likely that with the affixation of the deictic, syncope with resulting loss of the vowel in some -VVj occurred, as in *y-il-j-iij-Ø*, whose underlying form would have been */*y-il-aaj-iij-Ø//*. But due to the intervening consonant, the realized form of */*u-tz'ak-b'-uuj-iij-Ø//* would likely have been *u-tz'ak-b'-uj-iij-Ø*, in which the vowel was shortened but not lost.

I base my assumption about this on a pattern (*/*-o-ej// > *-ooj*) proposed for the Greater Tzeltalan perfect participle by Kaufman (1989 and his personal communication, 2000). In Kaufman's view, this morpheme *-ej, historically a morpheme that forms participles and gerunds, was the basis for an innovation in Greater Tzeltalan resulting in a new perfect for inflected transitive verbs. More about this later.

While *u-tz'ak-b'-uj-Ø-(iij)* is often linked to the preceding clause, there are examples of *u-tz'ak-b'-uuj-Ø* followed by the nominal object *u-to'k'*, *u-pakal*, which may be translated as 'he has ordered the flint, the shield of (name of possessor)' (Figure 11.4). Significantly, the deictic is absent on such Late Classic examples with a following object when the nominal subject follows that object. But if the nominal subject is specified in a preceding clause (a few examples are known), the verb will take the deictic even though the nominal object follows. This point to be reexamined shortly.

It is noteworthy that the above examples are derived or irregular stems—that is, they are not elsewhere treated in the script as root transitives. The root-transitive marker is a **wa** suffix cueing the verb form Ergative-CVC-Vw, analyzable as *-V₁-w, wherein *-V₁ echoes the root vowel (Bricker 1986; Wald 1994b). While this *-Vw suffix is now widely accepted as the Classic Ch'olan form for root transitives in plain status, active voice (assuming no marked incomplete/completive contrast), no Ch'olan or Tzeltalan language has the *-w. Only Tojolab'al preserves it (Bricker 1986; Wald 1994b; and Kaufman 1989), but since the cognate morpheme set is archaic, the *-w can be reconstructed. Furthermore, Kaufman (1989 and personal communication, 2000) has reconstructed plain-status root-transitive *-a(w) for Western Mayan, with reflexes *[-a] in Greater Tzeltalan and partially assimilative *-aw in Greater Kanjobalan. His assumptions are also supported by root-transitive imperatives in these languages in which the suffix is invariably

*-a. From this evidence I suggest that since *-aw was the antecedent to *-V₁w in proto-Ch'olan, the **wa** suffix may be an archaic synharmonic spelling. I have taken this small detour in the interests of **ji** below, which, in contrast, is productively disharmonic, cueing vowel length (Lacadena and Wichmann 2002, and this volume). While vowel length was apparently lost before the breakup of proto-Ch'olan (Kaufman and Norman 1984), it appears from the widespread use of disharmonic spellings that the writing system preserved it until the Late Classic.

These derived and irregular stems share one suffix in common: the syllabic sign **ji** (IL(A) occasionally takes **ja**, as on Waxaktun 13). This becomes more apparent if one peels away the anterior deictic *-iiy*, whose presence is cued by syllabic **ya**. One then observes that **ji** is the final bound element on all these stems. While the morpheme whose presence it signals has been a matter of controversy, the consistent function of **ji** as a visual marker for the set is undisputed. There are, nonetheless, occasional cases where **ji** is absent on stems that are otherwise visually and functionally identical to stems that have it (Figure 11.4). I suggest that the ancestor of modern Ch'olan plain-status derived transitives of the form Ergative-CVC-(C)-V-Absolutive had in the Late Classic begun to merge with the transitive perfect Ergative-CVC-(C)-VVj-Absolutive. I believe that this is due to both the loss of vowel length and the merger of final /j/ and /h/. The latter contrast was evident throughout most of the Classic (Grube, this volume).

Script CVC Root Transitives in Noninitial Position

I know of nine CVC root-transitive verbs that appear in secondary position; six take the **ji** suffix (see Figure 11.5 for examples of most of these).

u-chu -[ku]- ya :	<i>u-chuk-Ø-Ø-iiy</i>	'HE (that king just mentioned) captured him . . . (name of captive)'
u-WE' - ji-ya :	<i>u-we'-Ø-e(e)j-iiy</i>	'they have eaten them'
u-ko-b'o-wa :	<i>u-kob'-ow-Ø</i>	'he engendered it'
u-CHOK? - ji	<i>u-chok-ooj-Ø</i>	'he has censured it'
u-PAT-ta-ji	<i>u-pat-aaj-Ø</i>	'he has formed it'
u-K'AL-HU'UN-ji	<i>u-k'al-aaj-Ø hu'un</i>	'he has tied on the headband'
xa-yu-UK'/UCH'-Ø-ji	<i>*xa-y-uk'/uch'-uu-j-Ø</i>	'he too has drunk it'
ma u-na-wa-ji	<i>ma' u-nawaa-j-Ø</i>	'she has not adorned it'
u-me?-k'e-ji-ya	<i>u-mek'e(e)j-iiy</i>	'he has embraced it'

The first example above, the notorious example from Yaxchilan Lintel 46 (Figure 11.5a), has a pronominal subject that is co-referential with a king's name in the preceding clause, while its nominal object—a captive—follows. Like this case, most of these root-transitive CVC forms are unique and anomalous. Of them, only *u-kob'-ow-Ø* ('he engendered it'; cf. Tzotzil *kob'* 'copulate', Laughlin 1975: 175) has the **wa** suffix (Figure 11.5b). It appears as the first member of a couplet whose object is a series of earlier events in dynastic history; the second member is the perfect *u-chab'-(ii)j-iiy-Ø* 'he has overseen it'. The form *u-we'-e(e)j-iiy* (Figure 11.5c) is unique; Marc Zender (personal communication, 2001) has on close inspection confirmed the presence of the **ji** suffix. The form *u-chuk-Ø-iiy* is translated here as plain-status past for two reasons: (1) it lacks the perfect-

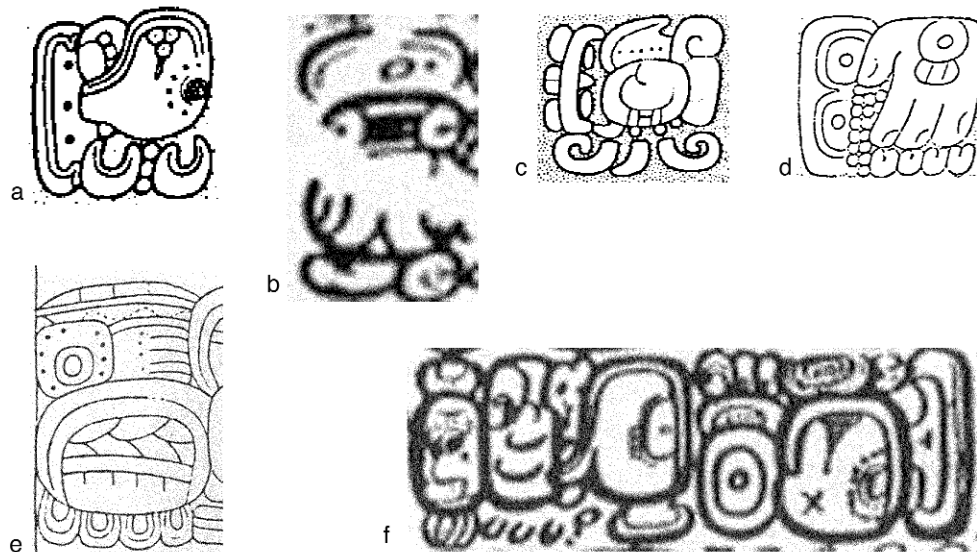


Fig. 11.5. The set of script root transitive perfect verbs. (a) **u-chu[ku]-ya** (Yaxchilan Lintel 46, F9; after drawing by I. Graham); (b) **u-ko-b'o-wa** (Palenque, 96 Glyphs, K6a; after drawing by L. Schele); (c) **u-WE'-ji-ya** (Yaxchilan Lintel 35, D7; after drawing by I. Graham); (d) **u-CHOK-ji** (Tonina, M. 104, G; after drawing by I. Graham); (e) **u-PAT-ta-ji** (Copan, Stela P, A9; after drawing by B. W. Fash); (f) **u-me-k'e-ji-ya SAK-nu-ku-NAH** (Palenque, 96 Glyphs, E6-F6; after drawing by L. Schele).

status marker, cued by syllabic **ji**, and (2) I have chosen a default narrative past for translation, considering that there is no marked completive/incompletive distinction on script transitives. In the first example above, *u-chuk-uw-Ø* would be expected if there were no deictic; the former is known in the script. It is curious that the *-Vw* root transitive suffix and the anterior deictic *-iiy* seem not to co-occur, suggesting a rule in which the deictic displaced *-Vw*.

The fourth example (Figure 11.5d) is problematic, because it assumes that the **ji** is not, after all, a phonetic complement to the 'incense drops' (*ch'aj*) in the 'scatter' hand, which may read *chok* 'cast' (Grube, personal communication, 1992; Wald 1994b). In many instances, *ch'aj* is spelled out as **ch'a-ji** or **CH'AJ-ji**; the latter suggestion—that T93 is a logograph as well as a syllable—is from David Stuart (personal communication, 2000). In the same context, Stuart also states that the **ji** may here be marking membership in an active derived transitive class with a meaning 'he incense-casts (upon) it'. I suggest that a root transitive perfect would have had an **-ej* suffix that assimilated to the preceding vowel, resulting in *-ooj* in this case. That the 'scatter' verb typically takes *-wa* (for CVC-*Vw*) supports the notion that **ji** is an alternative status morpheme. Alfonso Lacadena (personal communication, 2000) has independently reached a similar conclusion about examples of **u-CHOK-ji** at Tonina, suggesting that they may represent a Tzeltalan active perfect verb with the *-ooj* suffix.

The fifth example, from Copan St. P (Figures 11.5e and 11.6), appears to be *u-pat-aaj-Ø*, suggested by the **ta** following **PAT**. It is followed in turn by *ba 'ajaw* 'first lord'. This clause is preceded by *u-chab'-iiy-Ø* and the name of a supernatural. In contrast with other couplets mentioned here, these two verbs have different subjects but share as their nomi-

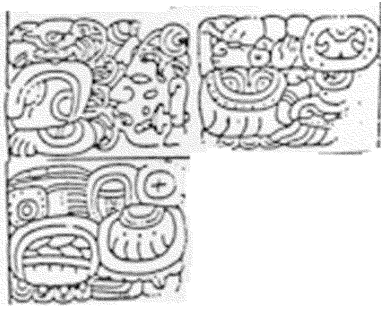


Fig. 11.6. **u-CHAB'KAB'-ji** God Name
u-PAT-ta-ji b'a-AJAW, *u-chab'-ij-Ø* (God
 Name) *u-pat-aaj-Ø ba ajaw* (Copan Stela P,
 East; after drawing by B.W. Fash).

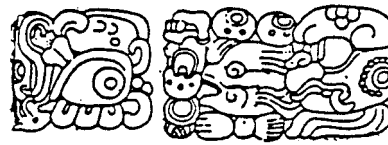


Fig. 11.7. **u-me-k'e-ji-ya u-la-ka-ma**
TUUN-ni, *u-mek'ej-ij u-lakam tuun*
 (Copan Stela A, D8–F8; after drawing
 by B.W. Fash).

nal object an event in a still earlier clause, the completion of the half-period and its associated *lakam-tuun*. The zero morpheme 'it' on *u-pat-aaj-Ø* 'he has formed/built it' may refer specifically to the completion of the stone monument, while the supernatural 'has overseen' the half-period ceremony (see Wichmann, this volume, for a discussion of those events). We also have *xa y-uk'uch'-uu-Ø* 'he too has drunk it' (not illustrated), on a ceramic vessel.

Albert Davletshin (personal communication, 2001) has called my attention to **ma u-na-wa-ji** and **u-K'AL-HU'UN-ji** spellings at Palenque, yielding *ma' u-naw-aaj-Ø* 'she has not adorned it' (not illustrated) and *u-k'al-aaj-Ø hu'un* 'he has tied on the headband' (not illustrated). Also at Palenque and at Copan, one notes a verb **u-me?-k'e-ji-ya**, which by its spelling and structure appears to be a CVC root transitive in perfect status. The uncertain element should be a Ce sign, and Marc Zender (personal communication, 2001) suggests that it may be **me**, yielding *mek'*, 'embrace', which has derivations in Yucatek related to governance (Barrera-Vasquez 1980: 519). In both cases, the object (*sak-muk-naj*: 'white great house', *u-lakam-tuun*: 'his flat stone [stela]') follows, while the nominal subject appears earlier in the text (Figure 11.5f; Figure 11.7).

In sum, the occurrence of **ji** on root transitives or members of the CVC transitive/positional class, in addition to its appearance on derived transitives, strengthens the proposal that **ji** cues another type of status marker.

The 'Witness' Verb and its Variants

This verb has a multiplicity of variants (see Figure 11.3f–i for transitive examples), and the full resolution of all of them into a simple explanation is beyond the scope of this study. Many of the relevant languages treat the lexical stem as CVCV *'ila*, rather than CVC *'il*. This may explain why such spellings as **yi-IL-a-ji** and **yi-la-ji** as well as **yi-IL-ji** are employed for *y-il-aaj-Ø*, 'he has witnessed/attended it'—the transitive perfect stem. The late **yi-IL-la-ja** spelling at Waxaktun is a harmonic spelling suggesting simplification of the suffix vowel.

The presumed intransitive forms (or rather, those lacking ergative pronouns) also present a variety of spellings. **IL-ji**, **IL-ja**, **IL-a-ja**, **IL-li-a-ja**, and **IL-ya** (not illustrated) all

appear in similar Late Classic contexts at Naj Tunich (Stone 1995), and **IL-ji** is found with some regularity on the monuments. **IL-a**, employing T12 **a**, also occurs on a late monument at Seibal. I have previously thought the forms with **ji** to be *'il-aaj* 'he watched/attended' (an antipassive)—with a long suffix vowel resulting from **'ila + -aj*. However, given the evidence for the survival of the **-ej* perfect morpheme into early Ch'olan, it now seems very possible that these are transitive perfect participles (with a long suffix vowel resulting from **'ila + -ej*) meaning 'in attendance'—literally 'in a state of being seen'. Spellings with final **ja** may, like the transitive cases above, reflect loss of vowel length, a feature also noted by Houston et al. (this volume) and Lacadena and Wichmann (2002). **IL-ya** may be an example of syncope and secondary loss of *-j-* in a consonant cluster. Some of these *'il-aaj* examples on the monuments relate to events in the preceding clause, and some do not.

Although the following do not take the **ji** suffix, the late spelling **yi-IL-wa** (**mo-no?-pa-ni**): *y-il-iw* (or *-aw ?*)- $\emptyset$ (*mon-paan?*) 'he visited Monpa(a)n' also appears at Naj Tunich (Stone 1995, D.29), and **yi-li-wa** (**u-tzi-li ta yo-to-ti**) *y-il-i-w- $\emptyset$ utz-il ta y-otot* 'he saw/divined goodness at his house' occurs in the Terminal Classic at Chichen Itza (Temple of the Four Lintels, Lintel 2; Krochok 1989: 11). These spellings—especially the latter—might suggest that in some speech communities *'il* was treated as a CVC transitive root and not as an irregular lexical stem *'ila*. Alternatively, the form at Chichen may have been *y-il-aw- $\emptyset$* . In either case, we may have additional support for the suggestion above that **ji** is not so much a marker of derived and irregular transitives as it is a marker of perfect-status transitives and perhaps perfect participles. But it is important to remember that **ji** is merely a syllabic sign that cues vowel length and the final consonant of the perfect morpheme, whose vowel assimilates to the preceding vowel in the stem.

'ita as 'Companion'; *'it-aaj* as 'Accompany'

Most of the verbs under discussion have generally received somewhat inexact translations. More precisely, the roots and stems *'il(-a)* 'see'; *tz'ak-b'u* 'set in order', literally, 'cause to line up'; *'at-i* 'bathe' (problematic); *'al* 'say'; *chab* 'oversee'; *'ak-ta* 'set down/leave behind' have endured the ongoing sifting and scrutiny of many scholars. Some of these readings have been reached independently by myself and other epigraphers, and others, such as *chab-i* and *'at-i*, are the specific work of Stuart et al. (1999b).

A few explanatory words are in order about a reading I have proposed—**'ita* and its transitive perfect derivation *'it-aaj*, as I now tentatively understand it. Its root has met with shifting interpretations among epigraphers, from 'sibling' to 'companion' to a variant of 'see' and back again to 'companion' in my view. The form *'etail* 'amigo privado' (companion, buddy) in Yukatek (Barrera-Vásquez 1980: 157–58) was the first evidence suggesting that **yi-ta-ji** as a form *y-itaj* (Figure 11.3e) 'his companion' might be viable. My view of this spelling as a noun has now been superseded by the perfect. The **yi-ta-je** spelling noted at Chichen Itza (Figure 11.3d) is problematic; Lacadena and Wichmann (2002, section 4.1.5) suggest that this and other **Ce** spellings may be an indicator of Yukatekan. While it is certainly possible that perfect **-ej* reached pre–proto-Yukatekan, the presence of the highly productive perfect *-m-aj* and the entry *'etail* 'companion' in that subfamily would suggest this is a Ch'olan word with a variant spelling which characterizes that geographic region.

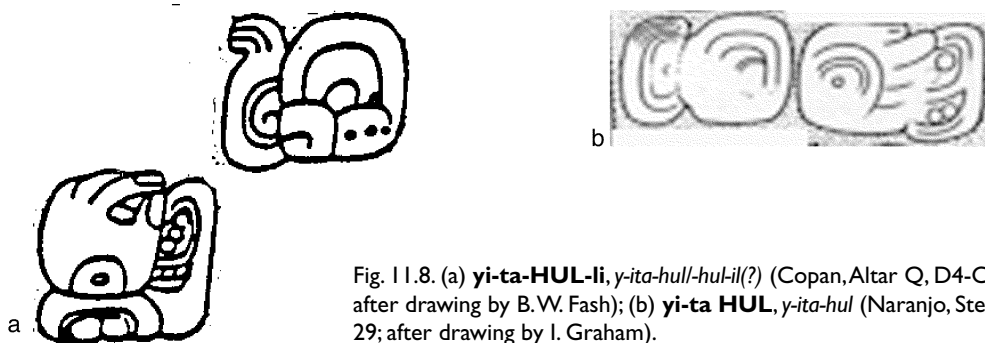


Fig. 11.8. (a) **yi-ta-HUL-li**, *y-ita-hul/-hul-il(?)* (Copan, Altar Q, D4-C5; after drawing by B.W. Fash); (b) **yi-ta HUL**, *y-ita-hul* (Naranjo, Stela 29; after drawing by I. Graham).

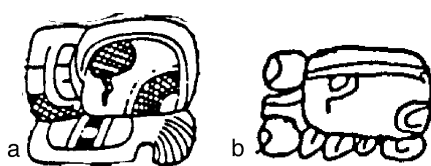


Fig. 11.9. (a) **u-CHAB'/KAB'-ji** (Tikal Stela 31, D12; after a drawing in Harrison 1999); (b) **u-HAB'/KAB'-ji-ya** (Cancun Panel of 160 Glyphs, J4; after drawing by L. Schele in Schele and Grube 1994.)

We find *'et'ok* 'companion' in Ch'orti' (Kaufman and Norman 1984: 138). However, those authors suggest a likely connection with the conjunction *y-it'ok* 'with, and' (literally, 'its foot-fellow') in Acalan Chontal; this is also noted in Ch'ol, together with the metathesized *y-ik'ot*. They feel that a limited /e/ > /i/ sound shift occurred in this root after all. I hesitate to suggest that the vowel may have once been long, given *et'ok* in Ch'orti'; rather, the related spelling **yi-ta hu-li**: *y-ita-hul* 'entourage'—literally, 'fellow-arriver(s)'—on monuments at Copan and Naranjo (Figure 11.8a–b), suggests kinship with Yukatek *etail* (*eta* + *-il*) 'companion'. This in turn suggests that **yi-ta-ji** might best be understood as *y-it-aaj* (from **y-ita-ij-Ø*) 's/he has accompanied him'. A factive *-a* suffix may also be embedded in the transitive derivation of a verb 'accompany' from a noun **it* or **ita* 'companion', in which case the true underlying form might have been **y-it(a)-a-ij*. More to be said shortly about transitive derivation in relevant languages.

The Function of The Anterior Deictic Clitic in Secondary Clauses

By examining many examples of a single stem such as *u-chab'-iiy-Ø*, one initially finds no predictable distribution of the *ya* syllable, except that the earliest examples of *u-chab'-iiy-Ø* lack the *ya* and later examples typically have it, with a trend of increasing preference through time (Wald 2000c; see also Figures 11.9 and 11.1). If one accepts **ya** as both necessary and sufficient for the anterior deictic *-iiy* (see Wald and MacLeod 1999; Wald 2000c and this volume), its temporal patterning may be explained as a shift in narrative style constraints. In relation to script verbs, the suffix *-iiy* generally served to emphasize that the nominal object of a transitive verb (in contrast with its bound zero-pronominal object) was the complex proposition in the preceding clause. Early Classic scribes apparently did not choose to use *-iiy* for this purpose, but later scribes did do so.

Wald (this volume) has observed that *-iiy* is also appended to verbs set in the distant

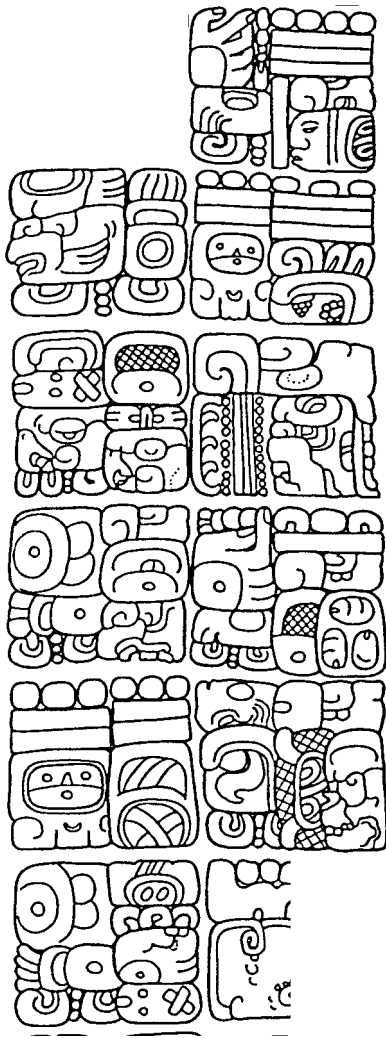


Fig. 11.10. First Clause: **TZUTZ-ji-ya** 19 (time periods) **u-ti-ya** 13 Ajaw 18 Zak **yi-li-a-ji-ya** (God Name) **u-ti-ya-** (Location), *tzuhtz(a)j-iiy-Ø* 19 (time periods) *uht-iiy-Ø* 13 Ajaw 18 Zak *y-il-a(a)j-iiy-Ø* (God Name) *uht-iiy-Ø* (Location) 'they were completed, 19 time periods of unknown length, it happened (Calendar Round date), he has witnessed/attended it (name of supernatural), it happened at (location)'. Second Clause: **TZUTZ-ji-ya** 6 (time periods) 13 Ajaw 13 Wo **u-CHAB'-ji-ya** (God Name) (Location), *tzuhtz(a)j-iiy-Ø* 6 (time periods) 13 Ajaw 13 Wo *u-chab'-i(i)j-iiy-Ø* (God Name) *uht-iiy-Ø* (Location) 'they were completed, 6 time periods of unknown length (Calendar Round date), he has overseen it (name of supernatural), it happened at (location)' (Quirigua Stela E, east, D13-C16; after drawing by M.Looper.)

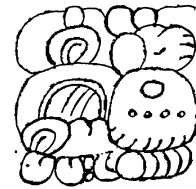


Fig. 11.11. **yi-ta-ji-ya**, *y-it-a(a)j-iiy-Ø* - Name (Calakmul Stela 51; drawing by S.Wichmann, based on field sketch by I. Graham.)

narrative past, which may explain its presence on *y-il-aaj-Ø-iiy* on Quirigua Stela E (Figure 11.10). The deictic is otherwise rare on the 'witness' verb. Likewise, there is only one example of *y-it-aaj-Ø-iiy* 'he has accompanied him' (the perfect suffix vowel *-aaj* may shorten here)—that on Calakmul St. 51 (Figure 11.11). This can perhaps be explained by the unusual syntax. Since the deictic clitic on these verbs serves to shift the reader's attention to backgrounded information, its presence or absence may signal the relative narrative importance of the events and protagonists at that moment. The 'accompany' and 'witness' verbs tend to introduce esteemed participants not previously mentioned; I speculate that for this reason they rarely take *-iiy*.

The same patterning through time is noted in the occasional coupleted transitive verbs. These almost always take the *ji* suffix, although there is one example, discussed below, in which a *wa*-suffixed verb is paired with a *ji*-suffixed verb. As with the single verbs, the couplets manifest a pattern in which *ya* is absent on the early examples and common on later ones. When it appears, it is always found on the second verb of the couplet. I sug-

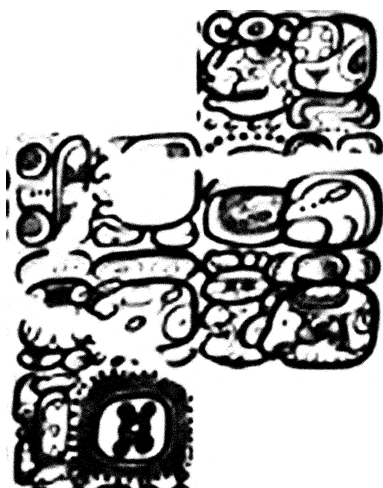


Fig. 11.12. **yu-xu?**[lu]-**ji-K'AN-TUUN-ni**, *y-uxul??-iij-Ø* *k'an-tuun* 'He has carved the sacred stone; **u-ta-pa-wa K'UH(UL)**-“Square-Nosed Dragon” Bowl-?-*tan*, *u-tapaw-Ø* *k'uhul* “Square-Nosed Dragon” Bowl-?-*tan* 'he adorned the “Square-Nosed Dragon” bowl at ? place(center)'; **u-ko-b'o-wa u-CHAB'/KAB'-ji-ya HO' WINIKHA'AB' AJAW K'INICH JANAAB' PAKAL**, *u-kob'-ow-Ø* *u-chab'-i(i)j-iij-Ø* *Ho'Winikha'ab'Ajaw K'inich Janaab' Pakal* 'he engendered it, he has overseen it (that), the Five K'atun Lord K'inich Janaab' Pakal' (Palenque, Tablet of the 96 Glyphs, L4–K7; after drawing by L. Schele).

gest that this signals a convention for both closure and deixis in a single move, as if to say “both these verbs share a nominal object in an earlier clause.”

The aforementioned transitive verb couplet on the Tablet of the 96 Glyphs at Palenque (Figure 11.12) includes **u-ko-b'o-wa**, **u-CHAB'-ji-ya...5-winik-haab' K'inich Pakal**. Here the first member has the structure of a root transitive: *u-ROOT-wa*, and the second, the ‘oversee’ verb, takes suffixed *ya* as is characteristic of late couplets. While there may be some uncertainty about the meaning of *u-kob-ow-Ø* (perhaps ‘he engendered it’, in consideration of Tzotzil *kob'* ‘copulate’), there seems little doubt that this is an active root transitive verb, which makes it likely that the second member *u-chab'-i(i)j-Ø-iij* is also an active verb rather than a gerund. I mention this only because of the “active vs. gerund” issue raised in the introductory section.

Previously noted were occasional cases wherein the pronominal (zero-morpheme) objects of secondary verbs are not co-referential with a preceding event; instead they follow the transitive verb, which is in turn followed by its subject. Examples given were *y-u 'carve' -iij-Ø k'an-tuun* name ‘he has carved the sacred stone-name’ and *u-tz'ak-b'-uu-j-Ø u-to'k'*, *u-pakal* ‘he has set-in-order the flint of, the shield of (name of possessor)’. In such cases, one might expect the deictic to be absent even in later texts, and it is absent. These constructions with following objects also argue for an active, inflectional verb stem rather than a gerund.

In one much-debated example from Yaxchilan Lintel 46 (Figure 11.13), *ya* (cueing *-iij*) appears on the CVC root transitive verb **u-chu[ku]-ya**: *u-chuk-Ø-iij*. This is followed by the name “Etz'nab' Sutz.” Here the purpose of the deictic *-iij* must be to signal that the nominal *subject* of the verb and the referent of the ergative pronoun—*Joy B'alam*—is at the end of the preceding clause, because we know from another record of this event on the Structure 44 steps that *Joy B'alam* captured “Etz'nab' Sutz’.” There are special conditions here: (1) this capture took place in the distant past, and (2) the name and deeds of *Joy Balam* had not previously been mentioned in the text under discussion. It appears that *-iij* displaces the *-Vw* suffix expected on a plain-status root transitive. This case, while anomalous, may be added to those wherein an active transitive verb is followed by its nominal object.

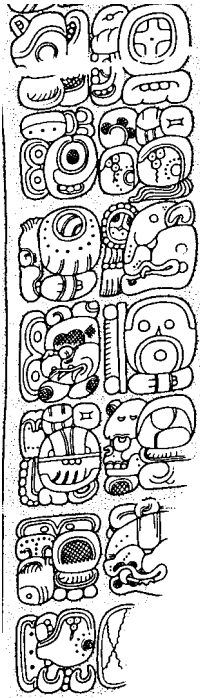


Fig. 11.13. **chu-ka-ja a-K'AN-na u-si-ja b'u-ku-TUUN-ni-AJAW**, *chuhk-aj-Ø* 'K'an Usij B'uk-Tuun Ajaw 'was captured K'an Usij, a B'uk-Tuun Lord'; **u-b'a-ki ITZAM B'ALAM**, *u-b'aak-Ø Itzam B'alam* 'he was the prisoner of Itzam B'alam'; **u-cha-CHAN-nu AJ-?-ki**, *u-chanu(l) Aj ??* '(who was) the guardian/captor of Aj-?'; **K'UHUL SIYAJ-CHAN AJAW-wa**, *K'uhul Siyaj Chan Ajaw* '(and a) Holy Heaven-Born Lord'; **u-TZ'AK-ka-b'u u-to-k'a (u-) pa-ka-la JOY B'ALAM**, *u-tz'ak-b'u u-to'k' u-pakal Joy B'alam* 'he ordered (kept in order) the flint, the shield of Joy B'alam'; **u-chu[ku]-ya** 'Flint' **SUTZ'**, *u-chuk-Ø-iiy* 'Flint Sutz', 'HE (Joy B'alam) captured 'Flint Bat' (Yaxchilan Lintel 46, F3–G9; after drawing by I. Graham).

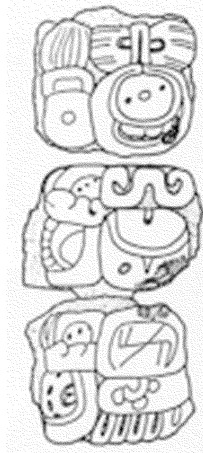


Fig. 11.14. **ti-ma-ja a-wo-la a TZ'AK-b'u-ji-ya**, *tihm-aj-Ø a-w-o'hl a-tz'ak-b'uj-iiy-Ø* 'is satisfied your heart (that) you have set it in order' (Palenque, fallen stuccos, Temple XVIII (Bodega Numbers 271b, 271a, 273b; after Schele and Mathews 1979: No. 539).

An unusual case of subordination of a derived transitive stem appears on a fallen stucco from Palenque Temple XVIII (Figure 11.14). The text was associated with a noble seated adjacent to companions in a bench scene and speaking to one of them. It reads **ti-ma-ja a-wo-la a-TZ'AK-bu-ji-ya**, *tihm-aj-Ø a-w-o'hl a-tz'ak-b'-u(u)j-iiy-Ø*, which I have translated as 'is placated your heart (that) you have set it in order'. Given that this is a spoken text with a snippet of live action, a present-tense translation is appropriate for the first verb. While the *tz'ak-b'-uuj* stem is noninitial, its nominal object cannot be identified with the main predicate *tihm-aj-Ø a-w-o'hl* to which it is subordinated. It is instead missing (or unwritten) and presumed not to follow, since the *tz'ak-b'-uuj* verb has a deictic clitic that directs the reader to seek a referent earlier in the narrative, or perhaps in the scene itself.

Called for is a clarification of a general point concerning the **-ji-ya** sequence on these verbs since the deictic interpretation has not been assumed by all scholars. The spellings **WINIK-ji-ya**: *winik-ij-iiy* 'winiks ago' (Figure 11.15a), **SI(H)-ja-ji-ya**: *si(h)y-(a)j-iiy* 'since she was born' (Figure 11.15b), and **u-CHAB'-ji-ya**: *u-chab'i(i)j-iiy* 'he has overseen it' (Figure 11.15c) all occur with regularity in the script. Although these have differing grammatical structures, syllabic **-ji-ya** on them always yields a surface form **-(V)j-iiy**. The **ji-ya** sign sequence is thus common on very different verb stems as well as on time counts; therefore I would expect it to be shared only among homophonous suffix sequences. The transitive stems with both **ji** and **ya** fit this pattern. Spelling consistency dictates a **-(V)j-iiy** pronunciation, and that in turn supports a deictic interpretation.

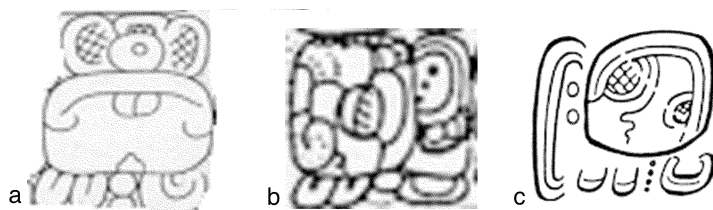


Fig. 11.15. Examples of the **ji-ya** suffix sequence on homophonous but grammatically dissimilar forms. (a) **WINIK-ji-ya**, *winik-ij-iiy* (Yaxchilan Lintel 31, J2b; after drawing by I. Graham); (b) **SI(H)-ja-ji-ya**, *si(h)y-aj-iiy* (Piedras Negras Stela 1, Back, B3; after drawing by J. Montgomery); (c) **u-CHAB'/KAB'-ji-ya**, *u-chab'-ij-iiy* (Caracol BC Marker 3, A3; after drawing by N. Grube in Chase, Grube, and Chase 1991: fig. 3).

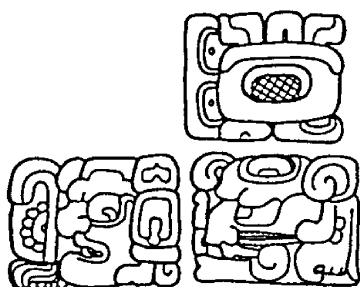


Fig. 11.16. **u-tz'a-pa-wa TUUN-ni** "Paddler Gods," *u-tz'ap-aw-Ø tuun* "Paddler Gods" 'they set a stone, the "Paddler Gods"' (Quirigua, Stela C, East; after drawing by M.Looper).

Thus, the pattern seen with syllabic *ya* appended to the *ji*-suffixed verbs, including a consideration of those without links to earlier events, substantiates the premise that the function of *-iiy* in the script is to redirect the reader's attention to anterior information in a text, as that in the sentence just prior. The suffix *-iiy*, as a productive deictic clitic in the writing system, has been noted on participles and both transitive and intransitive verbs. Together with Wald (2000c and this volume), who has justified this interpretation with a bounty of evidence, I take this as the most reasonable hypothesis. While the presence of this anterior deictic clitic on transitive stems does not mandate a specific translation, one might substitute a demonstrative pronoun for 'it', as in 'he has overseen that', to render a more exact equivalent.

The Scribal Transitive Modus Operandi

When considering as a group the CVC roots in the writing system that carry the *-Vw* suffix, one notes two important syntactic attributes: (1) these verbs—*u-tz'ap-aw-Ø*, *u-tzak-aw-Ø*, *u-ch'am-aw-Ø*, *u-chok-ow-Ø* and so forth—are followed by simple and predictable nominal objects—*tuun*, *k'uh/ch'uj*, *k'awiil*, and *ch'aj*—and (2) this nominal object will be followed by the nominal subject of the verb unless that person has been mentioned quite recently in the text. One can state a general rule that these sentences contain a predicate and two nominal arguments, but only one is new information. The stone-settings on Quirigua Stela C (Figure 11.16) exemplify this pattern; here we see *u-tz'ap-aw-Ø tuun* . . . the "Paddler Gods."

By examining the body of script derived and irregular-stem transitives, one notes that they are rarely followed by their nominal objects in addition to the requisite zero absolutive pronoun. This does happen occasionally, however, and in such cases those objects are

always simple and predictable: *y-u* ‘carve’ -*iiij-Ø* *k’an-tuun* ‘he has carved the sacred stone’ (Figure 11.12), *u-tz’ak-b’-uuji-Ø* *u-to’k’*-, *u-pakal* ‘he has ordered the flint, the shield of . . .’ (Figure 11.13). But much more common is the pattern wherein the nominal object—a complex royal name-and-title phrase or event phrase—is presented in the first of a pair of sentences, as follows (see also Figures 11.1 and 11.2):

(Sentence 1) Ended his first *winik-haab*’ in rulership - names and titles of X.

(Sentence 2) He has attended/witnessed it, names and titles of Y.

This pairing strategy is the ideal way to avoid loading either sentence with a surfeit of new information. The pattern is:

(Sentence 1) Intransitive verb - nominal human subject X, or
intransitive verb - nominal inanimate subject - human possessor X.

The verb is in plain status.

(Sentence 2) Transitive verb - nominal human or supernatural subject Y
whose nominal object is, or is contained in, clause 1.

The verb is in active perfect status.

When considering the actions expressed by the following verbs—‘witness’, ‘oversee’, ‘set in order’, ‘accompany’, ‘consecrate’ (‘bathe’), ‘abdicate’—even ‘say’—one is struck by the potential complexity and unpredictability of the nominal objects such verbs might take.

Josserand (1988b), in one of her pioneering studies of Classic Maya discourse, presented a cogent and detailed application of a methodology adapted from studies of living languages. Its main concepts—hierarchy of episodes, event line, peak event, foregrounding, and backgrounding—contributed refreshing depth and insight to a field just barely coming to grips with the grammatical integrity of Classic texts. At that time, the *u-chab’-iiij-Ø* verb was still being translated by many as ‘in the land of’ and, in general, verbs were being rendered with that “certain looseness” that Thompson favored. The existence of transitive verbs in the script had been postulated (Bricker 1986; Josserand 1988a), but the ripples had not yet begun to spread. Too little was known about the Classic verbal system to mandate interdependent hypotheses about its components.

Josserand (1988a) also applied the work of John Du Bois (1987b) to the structure of hieroglyphic texts. The essential postulates of Du Bois’s “Preferred Argument Structure” as outlined by Josserand were these: (1) only one or two noun phrases will follow any verb; (2) new information may appear as the subject of an intransitive verb, or as the object of a transitive verb, but *not* as the subject of a transitive verb. How, then, might we balance these maxims against our understanding of script transitive verbs?

The CVC root transitives with predictable following objects introduce only one new piece of information: the subject. The unpredictable and complex object of a derived or other transitive verb is always presented before the transitive verb itself, as the subject of an intransitive verb. But without question, the subjects of these derived transitive verbs may appear as new information, as on Tikal St. 31, where, following the Initial and Lunar Series and a half-period event (*tan-lam-aj*: Wichmann, this volume) and a series of gods, we are first introduced to *Siyaj-Chan-K’awiil* as the subject of *u-chab’-iiij-Ø* ‘he has overseen it’, ‘it’ being the half-period celebration. There are numerous other examples

wherein derived transitive verbs introduce new information, notably the ‘witness’ and ‘accompany’ verbs that highlight royal visitors or subordinates not previously mentioned. It would seem that the spirit of Du Bois’s axioms is honored while the letter is evaded.

Acalan Perfect Verbs Employing *-ihi*

In this section I consider the function and possible origin of the *-ihi* suffix in Acalan Chontal in order to (1) highlight the Acalan scribes’ repeated use of a transitive perfect verb *acathanihi* to reference information given earlier, and (2) give evidence of a perfect morpheme in Ch’olan languages. I subsequently present two other constructions from the Acalan document employing active root and derived transitives in completive aspect that parallel the Classic writing system’s usage of “secondary” transitive verbs.

Wald (2000c and this volume) has presented the most thorough and insightful comparison to date between the script verbs taking the *ya* suffix and those with the deictic clitic *-ihi* (as Wald understands it) in the Colonial Chontal document from Acalan-Tixchel (Smailus 1975). In Acalan Chontal, both transitives and intransitives employ this *-ihi* suffix. Its most common context is that of the first person transitive verb *acathanihi* [a-ka-t’an-ij-iy], translated by Smailus and Wald as ‘ya he dicho’, ‘I have already said/mentioned it’. Its nominal object is always anterior in the narrative—earlier, even, than the sentence just prior. This expression occurs eight times in the text and in all cases recalls events or persons mentioned earlier in order to link them to something in the immediate spotlight:

chumvanix ta ahaulel macvaabin yidzin pachimalahix acathanihi (Smailus 1975: 32)

‘He sat in reign, Macwaabin, the younger brother of Pachimalihix. I have mentioned him’ (my translation)

The verbs taking *-ihi* all lend themselves readily to translation as perfects, a fact made explicit by Anderson (2000) and noted also by Robertson et al. (this volume). While Wald does sometimes translate such verbs as perfects, he interprets *-ihi* as the full (time removed+anterior) form of the temporal deictic clitic *-(i)ij-iiy* (from a proto-Ch’olan-Tzeltalan antecedent **-eej-eeey*) found on numbered day counts in many Mayan languages. Alternatively, I find it reasonable that this suffix represents a fossilization of the perfect *-ej* plus the anterior deictic clitic *-iiy* (shortened to *-iy* by colonial times) with regressive vowel assimilation—not uncommon in relevant languages—yielding *-ij-iy*. As such, this suffix sequence would be an exact reflex of that seen on the derived transitive stems in the script. That it also appears on several Acalan intransitive verbs such as *bixi-hiix* [bix ‘go’-ij-iy-ix], *talihiiix* [tal ‘come’-ij-iy-ix], *pudzihi* [putz ‘flee’-ij-iy], and *numihi* [num ‘pass by’-ij-iy] argues for expansion of its range from transitives to intransitives, where the frequent addition of the particle *-ix* ‘already’ reinforces the perfect quality of the verb. Wald gives the following examples: *talihiiix huli licenssia* (Smailus 1975: 111) ‘after that came (about), the license arrived’; *talihix uyubi Padre frai diego de bejar uthan uinicobi* ‘after that came (about), Father Diego de Bejar listened to the words of the people’; *don luis paxua ukaba hainix bane pudzihi* ‘his son was named Don Luis Paxua; this one, he [is the one who] fled’. I would alter these translations in favor of a past perfect ‘after that had come about’ and ‘he is the one who had fled’. Similarly, a perfect interpretation best fits these sentences:

chumvanihix ta ahaulel paxtun uch'ochocal uppenel paxbolonacha tanix upectzil utakya yithoc yoza ha padreob . . . (Smailus 1975: 74)

'he had sat in reign, Paxtun, the younger brother and son of Paxbolonacha; therein was the news of their preaching and baptism, the Fathers . . .' (my translation)
ya ochi chiuoha pazi uzulhaban bayca numon yithocobi ya xach numihi holi tuyestancia francisco maldonado

'then he entered Chiwoha; he proceeded by way of Uzulhaban where I passed by with them. Then after he had passed by, he left by way of Francisco Maldonado's ranch' (translation by Wald 2000c)

One function of the perfect is to specify a continuing state within which another event takes place. In the first example above, the news of the preaching and baptism arrived within the ongoing reign of the king. This stands in clear contrast to the example I gave earlier, *chumvanix ta ahaulel macvaabin yidzin pachimalihix acathanihi*, which is followed by *Uvacdzac aHau ukaua paxbolonacha u ppenel pachimalihix* 'the name of the sixth king was Paxbolonacha; he was the son of Pachimalihix'. The form *chumvanix* [chum-wan(-i)-ix] appears in a successor list (indeed, twice); *chumvanihix* [chum-wan-ij-iiy-ix] anticipates a second event that is embedded in the continuing process of the first. Only the *-ih(i)* [-ij-iy] suffix differentiates them; therefore *-ihi* has a perfect function.

Like Wald, Robertson et al. (this volume) understand the *-ihi* suffix found on Acalan verbs to be a fossilized pair of temporal deictic clitics. In support of that view, they consider the anomaly of *onih* 'long ago' in the Acalan text. It has a kindred form *oniyi* in Ch'ol (Aulie and Aulie 1978: 90). I would agree that the *-ihi* of *onih* (with a Ch'ol variant *oniyi*) is likely to be the full form of the temporal deictic clitic (from *-eej-eej) in a morpheme sequence meaning 'many (time periods) ago'. We know that the Classic script accommodated homophonous sequences of differing grammatical structures; it is reasonable to assume that Acalan Chontal might preserve such. For reasons presented above, I prefer to analyze the verbal *-ihi* as fossilized residue of the perfect *-ej* (unrelated to *-eej* 'time removed', 'day'; see Robertson et al., this volume) plus deictic *-iiy*. Furthermore, its assimilation to *-ij-iy* and its extension to intransitives might not be an Acalan innovation, but rather a Classic Ch'olan one, given one telling script example wherein a perfect interpretation works extremely well, plus others that are certainly food for thought.

On the Tortuguero Box (Figure 11.17), a *k'al-tuun* 'stone-wrapping' ceremony occurs on 8 Ajaw 13 Zek. We are told that Balam Ajaw 'did not attend' or, following the perfect participial interpretation, 'was not in attendance' [*ma* 'ilaaj-Ø] because 'two 20-day months earlier' [*cha* 'winik-ij-iiy] 'he had road-entered (died)' [*och-b'ih-i(i)j-iiy*]. His name is repeated for clarification. The hypercorrect spelling OCH-B'IH-ji-ji-ya is an intentional strategy that disambiguates a morpheme *-iiy* juxtaposed to a similar final consonant on *b'ih* 'road'. I propose that this *-iiy* is an intransitivizer plus perfect marker whose underlying form is //*-i-ej//.

The case of Copan Altar F' (see Figure 11.18; Wald 2000c and this volume) is more complex, but further analysis of this challenging text may justify a perfect interpretation of *uht-ij-iiy* as 'it had happened' and *johy-(a)j-ij-iiy* as 'it had been paraded around'.

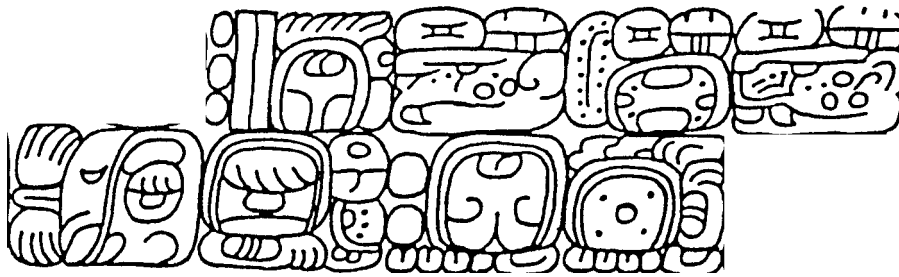


Fig. 11.17. Distance Number **ma-a-IL-a-ji B'alam Ajaw K'UHUL B'AAK AJAW**, ... *ma' il-aaj-Ø* B'alam Ajaw *k'uhul b'aak ajaw* ... 'he was not in attendance, Jaguar Lord, Holy Bone Lord'; **cha-WINIK-ji-ya OCH-B'IH-ji-ji-ya B'alam Ajaw**, *cha' winik-ij-iiy och-b'ih-ij-iiy-Ø* B'alam Ajaw 'two 20-day periods prior, he had died (road-entered), B'alam Ajaw' (Tortuguero Box [Mt.8], C2-G1; after drawing by M.Looper).

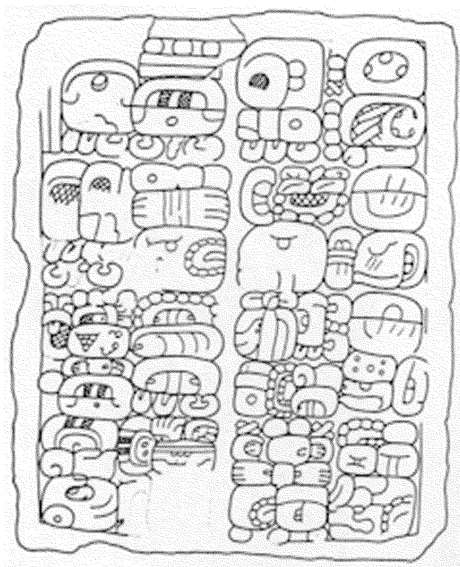


Fig. 11.18. Intransitive verbs and participles with the -*Vj-iiy* suffix. B1a. **u-ti-ji-ya**, *uht-ij- iiy-Ø* 'since it had happened'; A2a. **pa-k'a-ji-ya**, *pahk'(a)j-iiy-Ø* 'was formed'; A3b. **hu-le-li-ji-ya**, *hul-el-ij-iiy-Ø* 'had been in a returned state'; B3a. **JOY-ji-ji-ya**, *johy-(a)j-ij-iiy- Ø* 'was paraded around' (Copan Altar F; after drawing by B.W. Fash).

Other Relevant Verbs in the Acalan Document

I now consider two other relevant constructions from the Acalan text. In both cases, the nominal object of the transitive verb(s) in Sentence 2 is presented as a lengthy proposition in Sentence 1 (underlining and translations are mine):

(Sentence 1)

Hain don pablo paxbolon governador
vi ti cahai ayan abi upakibal
uHatantel tuba nucxibilbaob

Ukal yol abi yubin yol yuuilan ybache
cahi ybache tali umamob upapob
ahauonihobi.

‘This Don Pablo Paxbolon, governor
here in this town, it existed his request
(for) its being asked of the important old men
because he wants to hear, he wants to know
how it began, how they came, his grandfathers, his fathers
the kings of long ago’.

(Sentence 2)

hainob uchectezi uthaniob
ukaba alonsso chacbalam yithoc Luis tutzin
nucxibilbaob
unacahibal ayan ta analay.

‘These ones, they explained it, they said it,
(they) whose names are Alonso Chacbalam and Luis Tutzin,
great old ones;
Its beginning (the story) is here now’. (Smailus 1975: 25–26)

In Sentence 1, the main verb *ayan* is existential, but there is an embedded transitive couplet *y-ubi-n-Ø y-u-uila-n-Ø* whose noun-phrase object follows; the whole is the object of the transitive verb couplet in Sentence 2. This couplet contains a derived transitive *u-ched-t-ez-i-Ø* and a root transitive *u-than-i-Ø-ob*, and it introduces subjects Alonso Chacbalam and Luis Tutzin as new information.

(Sentence 1)

ma xach hain ni zut than xach me y
uchele tuba uinic
ukal namach tukin auti

‘not now, this twisted speech, then,
(which) he made to people,
because not on its day did it happen’.

(Sentence 2)

hainix me uyubiob unopetelob nucuinicob ahau
yithoc ubelcahob uthan akinobi

‘these indeed, they heard it, all of the principals, the great men, the king
and the people; they were the words of the priests’. (Smailus 1975: 71–72)

The first sentence is difficult but appears to be a focus transitive construction linked by *u-k'al* ‘by its doing’ to an intransitive clause whose verb is (*namach*) *a-ut-i* ‘it happened (not)’. The main verb of Sentence 2 is *u-yub-i-ob* ‘they heard it’, followed by its plural nominal subject. Apart from the scribal first-person use of verbs like *acathanihi*, constructions such as the above are not common in the Acalan document. The Acalan verbs above are all transitive completives whose subjects are introduced by the demonstrative *hain*, a feature not seen with the derived transitives in the Classic writing system. But a script cognate *ha'-i* is employed in other grammatical contexts to refer to previously mentioned protagonists.

Transitive Derivation in the Ch'olan Languages

There is a bounty of suffixes associated with transitive stem formation in the Ch'olan languages (e.g., Kaufman 1989; MacLeod 1987; Warkentin and Scott 1980; Fought 1967, 1972). With respect to known or expected forms in the script, here is a sketch of the most relevant derivations:

In Ch'olti' and Ch'orti', transitive verbs may be derived from nouns by the addition of superfactive ('act on') *-ta* and usative/applicative ('use as') *-i*; transitives are derived from intransitive roots by the suffixation of causative *-(e)s*; they may be derived from positionals by the addition of causative *-b'a* or its allomorph *-b'u* (*-p'a/-p'u* in Ch'orti'). In Ch'ol and Chontal, transitive verbs may be derived from nouns by factive *-a*, superfactive *-ta*, and usative/applicative *-i*; transitives are derived from intransitive roots by causative *-(e)s* and from positionals by causative *-chok*, *-ats'*, and superfactive *-ta*. Some suffixes indicate special attributes of the verb, as in celeritive ('happens quickly') *-k'-u* in Ch'ol, or they may combine, as in the converse *-p'-es* (Ch'orti'), which derives a transitive from an adjective by adding versive ('becoming') attributes to causation. Kaufman's term "factive" means 'do or make X', while "superfactive" is 'do on X'; "converse" combines "versive" with "causative." The term "causative" is widely used to mean 'cause to become/perform X'; "usative" means 'take for, use for' and the category overlaps with Kaufman's "applicative" meaning 'use on'. Will Norman coined "celeritive." In collaboration with Kaufman, Norman has contributed much to the general understanding of Mayan morphology (above data from Kaufman 1989 and MacLeod 1987).

Matching Script Lexical Stems to Ch'olan Equivalents

The inventory of derivational morphemes provided us by the script derived transitives will be seen as a short list in comparison with the inventories in the languages. But it is important to first identify the lexical stems present in the verbs that take the *ji* suffix. For that purpose, wherever possible, I have relied on Kaufman and Norman (1984).

Here are the script roots and stems we may identify:

<i>'il-a</i>	(vt)	'see'	
<i>'al-(a)</i>	(vt)	'say'	
<i>'ak-ta</i>	(vt)	'leave, abandon'	
<i>pat</i>	(pos + vt)	'form, make'	
<i>chok</i>	(vt)	'cast'	
<i>'ux(?)</i>	(vt)	'grind'(?)	
<i>'uxul(?)</i>	(n)	'carving'	perhaps undeciphered
<i>chab'/'kab'</i>	(n)	'earth'	
<i>'it(a)</i>	(n)	'companion'	
<i>'at -i</i>	(vi)		
<i>or *at</i>	(n)	'bathe' or 'bath'	
<i>tz'ak</i>	(pos + vt)	'complete'	
<i>'uk'/'uch'</i>	(vt)	'drink'	

We have already noted that several of these are CVC transitive roots. None except *'il* and *chok* also occur with the *wa* suffix, and *y-il-iw* (or *y-il-aw*) is restricted to Chichen Itza. Elsewhere the 'see' verb behaves as if its lexical stem is *'ila*. The root *'al* is regular in Ch'olan but irregular in Yukatekan, so its script behavior may reveal archaic irregularity and an underlying form *'al-a*. The form *'ak-ta* is clearly complex, but archaically so. The root *pat* in the script behaves as a positional, so I have identified it as such even though Kaufman and Norman do not. The root *'ux* is reconstructed by Grube (personal communication, 1995) from Chontal *bux* 'whetstone', *buxun* 'grind', and *'ux-ul* /*'ul-(h)ux*, though a far from certain reading, may be a gerund.

While *chab* 'earth' is the expected Ch'olan form, *kab* appears in Chontal and Ch'olti (Smailus 1975; Morán 1935). The entry *chab'i* 'oversee' was found by Stuart et al. (1999b) in Tzotzil and is very productive. The root *'it(a)* was discussed above; it functions as a noun meaning 'companion'. The 'bathe' root *'at-(i)* may be both an intransitive verb and a noun, and *tz'ak*, like *pat*, belongs to a large class of roots that are both positional and transitive.

Let us now look at the derivational morphemes. If *'ala*, *'ila*, *'ati*, *'ita*, and *'akta* are understood as bisyllabic roots, there are no productive derivational morphemes on them at the script horizon. The form *'ak-ta* might be analyzed into *'ak* plus the superfactive *-ta*, but what can *'ak* mean? One must conclude that these are the lexical stems.

The roots *pat* and *tz'ak* are clearly derived as transitives by the suffixation of the positional causative *-b'u*, an analysis reached independently by myself and others. They also appear in nontransitive contexts marked as positionals. We find *pat* in the focus antipassive clause *hiin pat-b'-uu-n-Ø-iij* 'throne' 'it is he who made the throne' on the "Regal Rabbit Pot" (K1398, Kerr 1989–2000); the *-n* here is an antipassive marker (Lacadena 2000). The root *pak* also takes *-b'u* in the compound noun *pak-b'u-tuun* 'intel', literally, 'put-face-down stone' (Stuart et al. 1999b); this is supported by the 'successor' titles, which read *u*-NUMBER-*tz'ak-b'u-il*. Zender (personal communication, 2000) has discussed the *-b'a* positional causative morpheme in other noun compounds; *-b'a* is the allomorph that follows a rounded root vowel, whereas *-b'u* occurs with unrounded root vowels.

The forms *'it/ita* and *cha/kab'* are nouns that lend themselves well to a "usative/applicative" operation in their derivation as transitives. Thus, *chab'-i* 'care for, oversee' in Tzotzil might be a loan that literally meant 'use as territory' in Ch'olan. I suspect that *'it/ita* took the *-a* "factive" suffix; the derived form would have been *'it(a)-a*. The 'carve' stem may have taken the *-i* "applicative" meaning "use on X," as in 'he used-carving-on the sacred stone'.

In sum, *-b'u*, *-i*, and *-a* represent a very short list of derivational suffixes on these verbs. The causative *-es(a)* is notable in its absence, although Marc Zender (1999: 78–82) reports a *yu-k'e-sa*: *y-uk'es* 'his trumpet' spelling on a conch shell trumpet, also noting *ok'-es* 'trumpet (n.)' in Tzeltal and Colonial Tzotzil in relation to *uk'* 'cry' in Ch'ol.

The *-n* Question: Where Was It?

A completive/incompletive distinction on derived transitives is provided in modern Ch'ol, Chontal, and Acalan Chontal by the contrast *-Ø* (completive)/*-n* (incompletive). An example from Ch'ol would be *mi-k-nich'-ta-n-et* 'I listen to you' vs. *tsa-k-nich'-ta-y-et* 'I lis-



Fig. 11.19. **u-TZ'AK-b'u-nu**, *u-tz'ak-b'un-Ø* 'he set(s) it in order' (Coba, Panel C in Ballcourt, Group D; after drawing by unidentified artist).

tened to you'. In Acalan Chontal <cazacanet>: *ka-saka-n-et* is 'we look for you'. While this *-n* has been reconstructed by Kaufman and Norman (1984) as the incompletive for proto-Ch'olan derived transitives, Kaufman (personal communication, 2000) has recently indicated that Robertson may be correct in reconstructing no marked incompletive/completive contrast on transitives in proto-Ch'olan. Its verbal system would thus more closely mirror that of proto-Greater Tzeltalan (Houston et al. 2000). The transitive *-n* in Ch'orti' is found on imperatives, a feature inherited from proto-Greater Tzeltalan, and in Ch'olti' it appears with imperatives and the *x-* future on derived transitives. It makes a spotty and unpredictable appearance on certain plain-status Ch'olti' derived transitives as well, perhaps suggesting influence from Ch'ol in preconquest times, or perhaps reflecting inheritance of some derived transitive stems of CVC(C)V*n* shape wherein *-n* is fused, as is noted in Tzeltalan. With the exception of two problematic examples (Figure 11.19) of **u-TZ'AK-b'u-nu** at Coba (Alfonso Lacadena, personal communication to John Robertson, 2000, and reply), the derived transitive *-n* does not occur in the script, and it is unlikely to have been an incompletive marker in any Ch'olan language during the Classic. While Robertson (personal communication, 2000) believes it to have been in the future alongside *x-*, the only detailed future text of which I am aware—the Tablet of the Inscriptions, West Panel, at Palenque—has neither *x-* nor *-n*. Instead, we find future (perfect) participle *-o'om* (Leaf and Kaufman, personal communication to Schele, 1987; and Kaufman 1989) and dependent *-ik* plus the exhortative *naik* in association with dates cast into the distant future. Robertson (personal communication, 2000) suggests that the verb forms seen in this text were not the true "*x-* future." So perhaps the best answers to the *-n* question are: (1) it hasn't yet been found and (2) it is at Coba, behaving inscrutably.

The *ji* Question: What Is It?

The identification of the morpheme represented by the *ji* syllable has been a thorny problem. I have in the past speculated that it might cue a final *-h*, or perhaps a *-j* reflex of the *-h* that Kaufman and Norman (1984) reconstruct as the final element on proto-Mayan derived transitives in plain status, and which he regards as obligatory on otherwise final vowels in all early Mayan (personal communication, 2000). The fact that the last sign (Stuart 1987) is syllabic *ji* and not *hi* (Grube and Martin 2001) has motivated those of us concerned with this problem to seek a *-j*-based solution. I was obliged to abandon *-h* and look elsewhere.

Kaufman's (1972: 149) Tzeltal/Tzotzil morpheme dictionary lists a "marca perfectivo" *-ox/-ex* (where */x/=j/*). For modern Zinacantán Tzotzil, Laughlin (1975: 26) lists *-oh* (formerly *-oj*) as the "perfective of transitive verb" and *-eh* (formerly *-ej*) as a "nominalizer of polysyllabic verbs exclusive of affect verbs." From Haviland's discussion of Colonial Tzotzil grammar in Laughlin (1988: 85, 108), it is clear that Modern Tzotzil *-oh*

above is the root transitive counterpart to a Colonial morpheme *-oj* for active root transitives whose active derived form was *-ej*, now only a nominalizer in Zinacantán Tzotzil. *-oj* and *-ej* are identified as “statives” by Haviland, who goes on to say: “The Colonial examples use stative verb forms to express a continuous state, regardless of whether the state is in the past.”

We will return to this observation. What Haviland calls “stative” and what Laughlin (1975) and Kaufman (1972) call “perfective” equates with the term “perfect” in Kaufman’s (1989) comprehensive manuscript on comparative Mayan. The *-oh* (*-oj* as demonstrated in the colonial language, which had the *h/j* contrast) and *-ej* above reflect, according to Kaufman, a perfect-status inflected-stem innovation shared by Tzeltalan and Tojolab’al that was based on an antecedent perfect participle/gerund which was itself a reflex of the proto-Mayan perfect participle *-o-ej/-ej*. There has been no suggestion of cognates in Colonial or modern Ch’olan languages for Tzeltalan perfect morphemes (though I have offered one above and will suggest another shortly), nor are there any that have replaced them. Here are the relevant forms from Kaufman (1989):

	Root Transitive		Derived Transitive
proto-Mayan			
perfect participle/gerund:	active	<i>-o-ej</i>	<i>-ej</i>
	passive	<i>-b’il</i>	<i>-b’il</i>
Greater Tzeltalan			
perfect participle/gerund:	active	<i>-ooj</i>	<i>-ej</i>
	passive	<i>-b’il</i>	<i>-b’il</i>
Tzeltalan Proper			
perfect status:	active	<i>-oj</i>	<i>-ej</i>
	passive	<i>-b’il</i>	<i>-b’il</i>
Tojolab’al			
perfect status:	active	<i>-unej</i>	<i>-(u)nej</i>
	passive	<i>-ub’al</i>	<i>-(nu)b’al</i>
Cholan			
perfect status:	active	?	?
	passive	<i>-b’il</i>	<i>-b’il</i>

It should be noted that this analysis follows Kaufman and Norman (1984) in recognizing plain, dependent, imperative, and perfect status in the verb marking system of proto-Mayan and its descendants. While these authors indicate that the perfect status had been lost from Greater Tzeltalan, it is apparent from Kaufman’s later work that this refers to the loss of the original (< proto-Mayan) perfect-status morphemes *-o-’m* and *-’m* for root and derived transitives, respectively. This morpheme survives in Yukatekan, for example, as transitive perfect-status *-m-aj*. It bears repeating that the *-oj/-ej* forms noted above are innovations of an inflectional perfect stem based on a perfect participial/gerundive morpheme. The participle has been lost in relevant languages (but I now believe that it survived into script times); the gerund coexists with the active perfect in Tzeltalan and

Tojlab'al. The passive perfect *-b'il* thrives in Tzeltalan and Ch'olan as does *-ub'al* in Tojlab'al. In addition, Kaufman (personal communication, 2000) suggests that the innovated plain/imperative/dependent status marker *-j* on derived transitives in Chuj and K'anjobal may have developed from a perfect **-ej* now lost from those languages. Also noteworthy is that Tojlab'al is considered by Kaufman to have been a receiving language that manifests significant influence from both Ch'olan and Tzeltalan.

Following are examples of the active perfect and related gerunds in Tzeltal, Tzotzil, and Tojlab'al (examples from Laughlin 1975; Haviland, in Laughlin 1988; Furbee-Losee 1976b; and from the Guzman/Ara Colonial Tzeltal dictionary by way of Robertson, personal communication, 1999):

Colonial Tzeltal (examples from Guzman 1616):

Vet : act. poseer, ensenorearse (note *bet'* vt. 'own, subject, dominate' in Colonial Tzotzil)

Vet-ogh, me avetoghon

Vetbil: poseido, ensenoreado

Vet-oghel: heredero, poseidor 'one who possesses'

The relevant morphemes are *-ogh* and *-oghel*.

<i>me</i>	<i>a-vet-ogh-on</i>
interrogative	2sE-possess-perf-1sA 'have you taken possession of me?'

Olantes: act. aposentar, descargar, reservar

Olantes-egh: gh-mesonero 'innkeeper'

The relevant morpheme is *-egh*.

Colonial Tzotzil (examples from Haviland, in Laughlin 1988)

k-atin-ej-Ø j-ba ta ch'ich'

<i>k-atin-ej-Ø</i>	<i>j-ba</i>	<i>ta</i>	<i>ch'ich'</i>
1sE-bathe-vt perf-1sA	1sE-self	prep	blood
'I had washed myself in blood'			

y-elan-ej-Ø s-ba s-ti' lok'ebal s-na x-chi'uk s-na X

<i>y-elan-ej-Ø</i>	<i>s-ba</i>	<i>s-ti'</i>	<i>lok'ebal</i>	<i>s-na x-chi' uk</i>	<i>s-na X</i>
3sE-face-vt-perf-1sA	3sE-self	3sE-entrance	3sE-house-conj	('its companion')	3sE-house X
'The entrance to his house has faced itself with the house of X'					

Modern Tzotzil (examples from Laughlin 1975)

<i>a-maj-oj-on</i>	'you have hit me'
<i>j-maj-oj-ot</i>	'I have hit you'
<i>hna'oh</i>	'I have known it'
<i>ana'ohik</i>	'you all have known it'

Tojolab'al (example from Furbee-Losee 1976b)

ha-hel-t-es-uneb-o'

1sE-change-caus-vt-perf-1sA 'you have changed me'

I will posit, after Kaufman, the following scenario: Greater Tzeltalan had perfect participle/gerund forms *-o-ej/-ej* and from them innovated the perfect active forms while keeping the gerund forms (and for a time, the participles, as suggested below). For root transitives, *-ej* assimilated to the antecedent vowel with concomitant lengthening, yielding *-ooj* after *-o*. This eventually shortened to *-oj* in Tzeltalan proper. Because Tzeltalan derived transitives end in consonants—hence no vowel to trigger assimilation—*-ej* remained *ej*.

From this point, I suggest that the script evidence above testifies to the existence of the perfect active *-VVj* on both root and derived transitives, although I bow to Robertson in acknowledging that such forms were, historically, agent-focused gerunds as well as participles. In proto-Ch'olan, unmarked derived transitive stems did not end in consonants. Since Greater Tzeltalan *-o-ej* was realized as *-ooj* (and eventually as *-oj*) (Kaufman 1989, and his personal communication, 2000), it is likely that Classic Ch'olan *-V-ej* was realized as *-VVj* and eventually *-Vj*, as in *//u-tz'ak-b'u-ej-Ø// > //u-tz'ak-b'-uu-j-Ø// > u-tz'ak-b'-uj-Ø*. One observes that the disharmonic (on all but *-ii*) *ji* syllable was chosen to represent a long suffix vowel (Lacadena and Wichmann 2002). The spelling rule that originated disharmonic *ji* collided at its intercept with *-ii* with the directive for consistent visual representation of morphemes. That is as far as I dare venture into this topic, but the road leads onward.

Vowel assimilation also happened with the root transitives such that *CVC-V-ej* became *CVC-VVj*, as in *//u-pat-a-ej-Ø// > u-pat-aaj-Ø*, which eventually became *u-pat-aj-Ø*. The development of *CVC-Vj* may have been quite late, as reflected in the spelling *yi-IL-la-ja* for *y-il-aj-Ø* on Waxaktun St. 13, dated 10.0.0.0.0 (Figure 11.3i).

There is a *ya-le-je* collocation on the Palenque Hieroglyphic Stair (Figure 11.20) related to the defeat of Palenque's patron gods. The root has been linked by various epigraphers to proto-Ch'olan **yAl*/Greater Tzeltalan **yal* (t.v.) 'throw down' and passivized **yahl* (i.v.) 'fall' (Kaufman and Norman 1984: 137). If one posits the existence in Classic Ch'olan of **-ej* as a participial morpheme as well as a marker of perfect status, a form *yal-ej* might be explained as a perfect participle built on a CVC transitive root that means 'in a thrown-down state'. The whole would read *yal-ej-Ø* . . . Triad God names: 'they were thrown down (literally, 'in a thrown-down state'), the Triad Gods'. In this case the participle is formed on the CVC root rather than on the CVC-V lexical stem (which would yield **u-yAl-aaj* in perfect status).

The transitive perfect morphemes I propose for the Classic have disappeared from modern Ch'olan languages, with the exception of what I take to be perfect residue in Acalan *-ibi* (discussed earlier) and the *-ohel/-oel* suffix found in Ch'olti' and Ch'ol. I suggest that *-ohel* reflects a nominalization innovated in Greater Tzeltalan (note *-oghel* in Colonial Tzeltal above).

I speculate that the disappearance of the productive active perfect from Ch'olan might be explained as a loss of distinction from the plain-status *CVC(C)-V* without reinvention of a new perfect; this is not too surprising, for many Mayan languages have lost their perfect markers (Kaufman 1989). This loss in Ch'olan would have followed (1) the shorten-

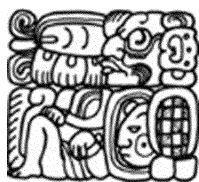


Fig. 11.20. **ya-le-je** GI, GII, GIII, **yal-ej-Ø** GI, GII, GIII 'they were in a thrown-down state (the patron gods of Palenque)' (Palenque, Hieroglyphic Stairs, Palace, House C, C2; after drawing by L. Schele).



Fig. 11.21. **u-TZ'AK-b'u-ji-?**, **u-tz'ak-b'uuj-Ø-?** (Yaxchilan Lintel 45, C5; after drawing by I. Graham.)

ing of the suffix vowel and (2) the eventual loss of contrast in final *-j* and *-h* and the reduction of *-h* to zero. The initial result was *-j*, but we see evidence of *-j* > *-h* > *-Ø* in the intransitivizing *-aj* suffix, recorded as *-a* in Ch'olti', and we see it in the Ch'olti' variants *-ohel* and *-oel*. The perfect forms that survived in Ch'olan did so via their fusion with a following *-VC* suffix (*-ihi*, *-ohel*). While this reduction of *-j* to zero is considered by Kaufman (personal communication, 2000) to be a Postclassic phenomenon at the earliest, Robertson (personal communication, 2000) sees it as much earlier. That it may have roots in the Classic is supported by the occasional Late Classic interchangeability of final *ji* and *hi* and by alternation between *ja* and zero as discussed in the next section. It may also be supported by the following: One may compare the **u-TZ'AK-ka-bu** (where there is no space for a *ji* sign) *u-to'k' u-pakal* on Yaxchilan Lintel 46 (Figure 11.4) with a syntactically identical example spelled **u-TZ'AK(-ka)-b'u-ji** *u-to'k' u-pakal* on Lintel 45 (Figure 11.21). Alfonso Lacadena (personal communication to John Robertson, 2000) has noted a similar contrast in late spellings of the 'see' verb (*yi-la-ji*, *yi-IL-la-ji* vs. *yi-IL-a*, *yi-IL-la*); however, there is an alternative explanation to be considered momentarily. The late spelling **u-CHAB'-ya** at Piedras Negras (Wald 2000c) perhaps also reflects a loss of *-j* in the following manner: *u-chab'-i(i)j-Ø-iij* > *u-chab'-ih-Ø-iij* > *u-chab'-i-Ø-iij* > *u-chab'-Ø-iij*. Forms like *oniyi* in modern Ch'ol and *acathanii* in Acalan Chontal are testimony to this process.

My answer to the *ji* question is that there is persuasive evidence for its interpretation as an active perfect marker for root and derived transitives in the script. Further substantiation is offered in the next section.

The Nominalized Antipassive Hypothesis

Robertson (Stuart et al. 1999, and his personal communication, 1999/2000, in Houston et al. 2001, and in this volume) has put forth an alternative hypothesis about the so-called secondary verbs that merits serious attention, although I disagree with significant elements of his position. There is an anchor point of agreement nonetheless. The essence of his argument is that these stems are nominalized antipassives (NAPs) of the form *y-ila-ij*,

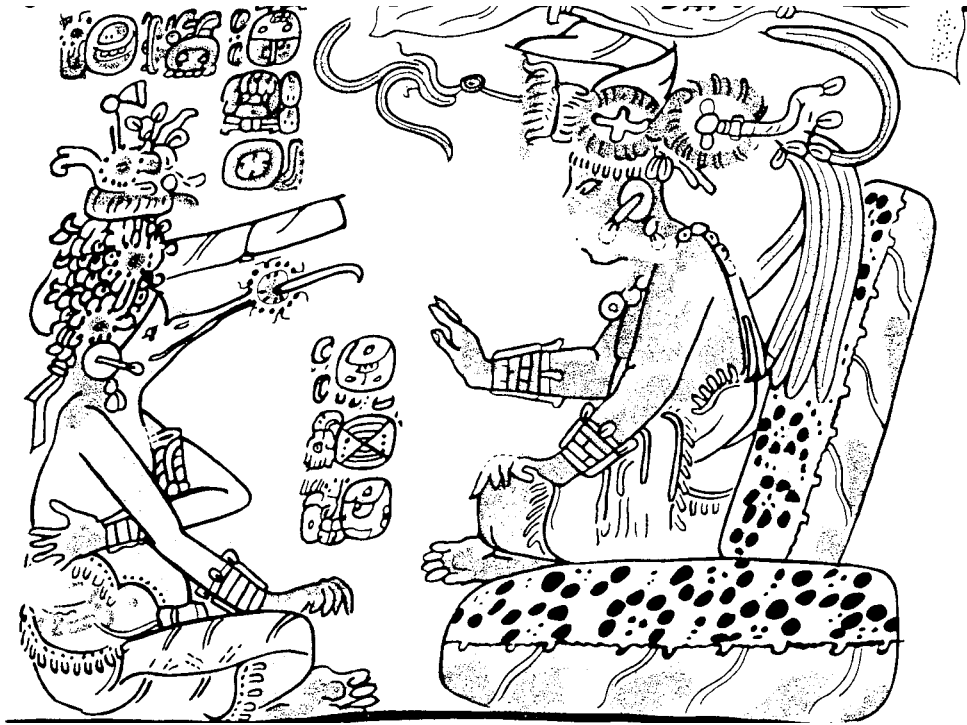


Fig. 11.22. **ya-la-ji-ya tz'u-nu-nu ti ITZAMNAH**, *y-al-a(a)j-Ø-iiy tz'unun ti Itzamnah* 'he has said it/that (referencing earlier text), the hummingbird to Itzamnah' (Tikal "Hummingbird Pot"; after drawing by VV. R. Coe).

u-chabi-ij-(ya[j]), *y-ala-ij-ya(j)(tz'unun ti Itzamnaah)* with the meanings 'it is his witnessing (of it)', 'it is his overseeing (of it)', 'it is his saying (of it), the hummingbird to Itzamnaah' (Figure 11.22).

Both *ji* (which Robertson identifies as the morphosyllable **IH**) and *ya* are understood to spell nominalized antipassive morphemes: **-ij* and **-ya(j)*. The first he reconstructs from *-egh* in Colonial Tzeltal (Guzman 1616) and elsewhere in Tzeltalan (see below). I have documented *-y-a(j)* in all of the Ch'olan languages (MacLeod 1987; after Aulie and Aulie 1978; Fought 1967, 1972; Morán 1935; Smailus 1975; and Knowles, personal communication, 1983) as has Robertson. The suffixes **-ij* and **-ya(j)*, he suggests, attach to one another on Late Classic script secondary verbs via a tendency Robertson calls *NAPophilia*—a delightful term! On this general point I agree; such clustering can be seen, for example, in Colonial Tzotzil *j-tz'ibay-van-ej* 'scribe' and modern Tzeltal *j-pox-ta-wan-ej* 'curer', where *-van/-wan* is an antipassive and *-ej* the aforementioned gerund-former for derived transitive stems (Laughlin 1988: 450; Kaufman, personal communication, 2000). This *-egh* is a primary source for Robertson's reconstructed **-ij*, as may be seen in a few of the many examples from Colonial Tzeltal he has provided me (Robertson, personal communication, 1999). Two were given earlier and are repeated here:

Atay: act. contar; atayghon, n

Atay-egh: gh- contador.

Elmaghtez: xelmagh: n. proveer.

Elmaghtez-egh: gh- proveedor.

Olantes: act. aposentar, descargar, reservar.

Olantes-egh: gh-mesonero.

He contrasts this form *-egh* for derived transitives with *-oghel* for root transitives in other examples:

Vet: act. poseer, ensenorearse (note *bet'* in Colonial Tzotzil)

Vet-ogh, me avetoghon

Vetbil: poseido, ensenoreado

Vet-oghel: heredero, poseidor

Loc: act. libertar (note *lok'* in Colonial Tzotzil)

Loc-oghel, gh- libertador

These examples attest to a gerundive suffix of the form *-ej* on derived transitives in Colonial Tzeltal; in that I fully agree with Robertson, although following my own investigation of it, I would now hesitate to identify it historically as an antipassive. I would rather equate it, as Kaufman has done, with the agent-focused perfect gerund noted in Tzeltalan in the previous section. The related forms *-oj* and *-ojel* also appear in these entries; note *vet-ogh* and in particular *me avetoghon*. The latter I have previously analyzed as:

<i>me</i>	<i>a-bet'-oj-on</i>
interrogative	2sE-“possess”-perf-1sA
‘Have you taken possession of me?’	

Trusting that the *-ogh* of *vet-ogh* and *vet-oghel* are the same morpheme, then we find side by side both the active perfect and the gerund for this verb. While Robertson regards *-oghel* (*-oj-el*) as another example of clustered, NAPophilic morphemes, I suspect *-ogh* and *-el* are not synchronically equivalent at all, as explained below.

Ch’ol and Ch’olti’ have a fossilized *-ohel* suffix with the same function: it forms verbal nouns (gerunds) from CVC transitive roots. Warkentin and Scott (1980: 20) list *melojel* ‘juicio’ and *ch’Acojel* ‘maldición’, and in Ch’olti’ (Morán 1935a) we find *inu ilohel* ‘aquello que veo’, *in patohel* ‘lo que yo formo’.

I distill from these examples and from Kaufman’s data above and from many exchanges with Robertson that Greater Tzeltalan maintained a gerundive function for *-oj/-ej* while innovating an inflectional function. These may have existed side by side for a time. But it appears that *-oj* alone, appropriated for the active perfect, lost its gerundive (as well as participial) function in early Tzeltal, necessitating the innovation of *-oj-el* for the gerund, achieved by adding the nominalizer *-el* to the stem. In Haviland’s list of Colonial Tzotzil morphemes (in Laughlin 1988: 86), *-oj* and *-ej* appear as markers of “stative aspect” while a separate entry for *-ej* states “doing whatever action the verb denotes”: *malay* ‘wait’ > *malayej* ‘waiting for something’. No mention is made of *-oj-el*, and at this writing I have not established whether it is present in Tzotzil.

In his quest for a link to the *ji* suffix in the script, Robertson has invoked the gerunds

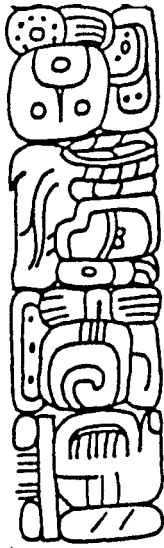


Fig. 11.23. **PAT-la-ja yo-OTOT-ti u-ma-yi-ji AJ-k'a-xa**, *pat-l-aj-Ø y-otoot u-mayij Aj K'ax* 'was formed its house (container), his tobacco, Aj K'ax' (Tortuguero Box [Mt.8], S2–S5; after drawing by M.Looper).

of Colonial Tzeltal (*-oj-el*, *-ej*) but seems not to have given consideration to the active stems, even though one appears in his examples. While Kaufman has found no evidence of either the gerundive or the active transitive perfect in Ch'olan, I concur with Robertson that the *-oghel* of Colonial Tzeltal and *-ohel* of Ch'ol and Ch'olti' are the same. I would further argue that these forms justify a reconstruction to proto-Ch'olan of a fossilized gerund for CVC transitive roots that is cognate with the perfect forms under discussion. I do not agree that the corresponding proto-Ch'olan form for derived transitives was *-ij* canonically, although it may have been realized as such in certain environments. While there may be an *-eej* nominalizer in Mocho (Robertson, personal communication, 2000, citing data from Kaufman), given the evidence presented above, I would seek an explanation within Mocho rather than posit **-eej* for Greater Tzeltalan. Thus, in my understanding, *-ij* as a base form did not exist. That said, Robertson found the critical link between script *ji* and an attested source but he did not, in my estimation, take it quite far enough, perhaps due to his analysis of *ya* on these verbs. While his nominalizer hypothesis is attractive, it introduces difficulties that demand a more satisfactory solution:

First, given that we are now aware of a great variety of inflected intransitive verbs in the script—root intransitives, positionals, passives, mediopassives, inchoatives, and antipassives—and given our consensus that active CVC root transitives are common, it seems inconceivable that active derived transitives would not also be present.

Second, the transitive verb couplet on the Tablet of the 96 Glyphs at Palenque (Figure 11.12) includes **u-ko-b'o-wa**, **u-CHAB'-ji-ya...5-winik-haab K'inich Pakal**. Here the first member has the structure of a root transitive, **u-ROOT-wa**, and the second, the 'oversee' verb, takes the *ya* as is characteristic of later couplets. While there may be speculation about the meaning of *u-kob'-ow-Ø* (perhaps 'he engendered it' as suggested earlier), there seems little doubt from its structure that it is an active root transitive verb, which makes it likely that the second member of the couplet, *u-chab'-i-j-Ø-iiy*, is also an active verb rather than a gerund.

Third, the "Hummingbird Pot" text (Figure 11.22) containing *y-al-a(a)j-Ø-iiy tz'unun ti Itzamnaah* 'he has said it, the hummingbird to Itzamnaah' is suggestive of an active stem on syntactic grounds. It seems unlikely that a gerund would be followed by a prepositional phrase.

Fourth, we may recall the aforementioned examples wherein a verb with the *ji* suffix is followed by its nominal object. These strongly suggest an inflected verb.

As an alternative, Robertson et al. (this volume) reactivate an earlier suggestion of Houston's that the derived transitive stems in the script are active verbs, a conclusion I

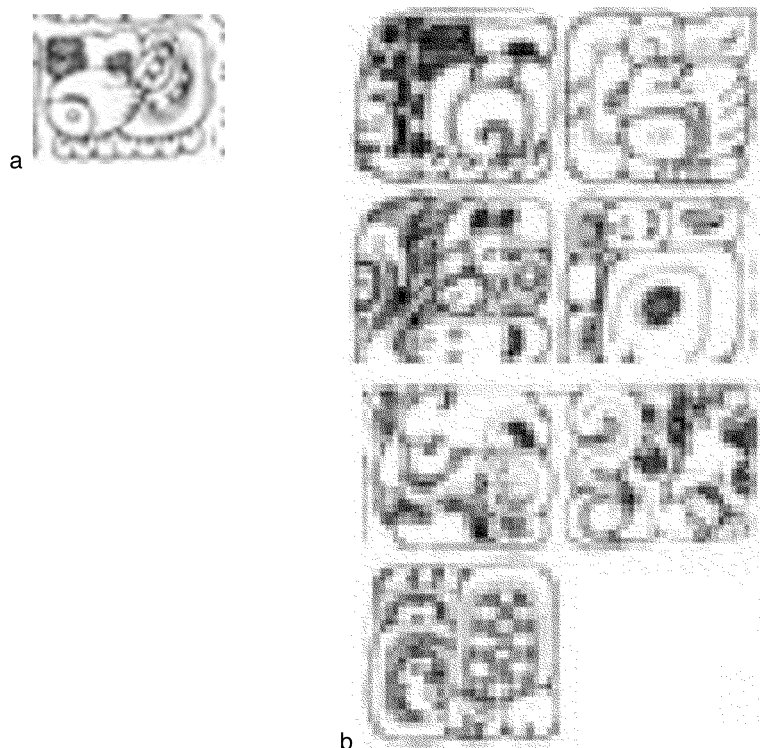


Fig. 11.24. Two examples of *may-ij* from the Palenque Palace Tablet. (a) **K'AL-ja-MAY-ji**, *k'ahl-aj-Ø mayij* or *k'ahl-aj-mayij-Ø* 'was wrapped the/his gift' or 'performed the act of gift-wrapping' (incorporated noun) (Palenque Palace Tablet, E8; after drawing by L. Schele); (b) **u-MAY-yi-ji yi-chi-ni-NAL-la u-K'UH/CH'UH-li** (GI, GII, GIII), *u-may-ij-Ø y-ichnal u-k'uh/ch'uh-il* ... 'he has given it (the *k'awiil* scepter mentioned earlier) in the presence/domain of his gods (the patron gods of Palenque)' (Palenque Palace Tablet, G14–G15; after drawing by L. Schele).

reached independently and which I have had no reason to abandon, even as I wrestled with the linguistic referent of the *ji* suffix. Their solution—that **-ji* is a thematic marker for derived transitives—is historically incomplete, as was my kindred solution prior to settling on the perfect hypothesis. I agree in principle with all but their suggestion that syllabic *ya* in these contexts cues the past tense. I see *-iiy* (cued by *-ya*) as a productive temporal deictic just as Wald (2000c and this volume) does, and, while it is beyond the range of this study to examine the “deictic recruitment hypothesis” that Robertson et al. offer, I will note one problem with it here. To suggest that the first-reported of two simultaneous events is in present tense (as in ‘he sits in rulership -A’ or ‘he ends his first *winikhaab* in rulership -A’) while the second is in past tense (as in ‘he ordered it -B’ or ‘he witnessed it -B’) creates an awkward, inexplicable disjunction on the event line. Why, if these texts are—as the authors believe—largely in the narrative present, should a contemporaneous (i.e., not back-referenced) past tense verb intrude at all?

However, Robertson et al. (this volume) also offer as evidence of an **-ij* nominalizer the spelling **u-ma-yi-ji** (Figure 11.23) on the Tortuguero Box. This is followed by a shortened name phrase that appears earlier in the text and is preceded by *y-otot* ‘its container’. Here I follow Marc Zender (personal communication, 2001), who also interprets this

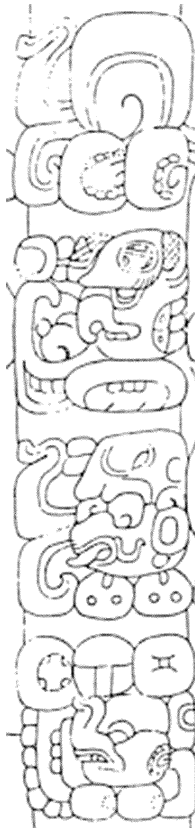


Fig. 11.25. Example of the name of “Smoke-Shell” of Copan. **K’AHK’ yi-pi-ya-ja CHAN/KA’AN-na K’AWIIL-la K’UHUL/CH’UHUL xu?[ku]-pi AJAW**, *k’ahk yip-yaj-Ø chan k’awiil k’uhul xukuup?? ajaw* ‘fire he piles up in the sky god-image holy (Copan) lord’ (Copan Stela N, B5–B8; after drawing by B. V. Fash).

u-mayij as ‘his tobacco’, *y-otot u-mayij* ‘its container, his tobacco’). Interestingly, we find *mai* in Ch’olti’ (Morán 1935a) as both ‘gift’ and ‘give’. The “deer hoof” examples of *may* on the Palenque Palace Tablet (a reading offered by David Stuart, personal communication, 1997) suggest both an embedded noun (*k’ahl-aj-Ø may-ij* ‘was wrapped the gift/tobacco?’) in one case and an inflected transitive verb (**u-may-i-ej-Ø > u-may-iiij-Ø* ‘he has given it’ [the *k’awiil*]) in the other (Figure 11.24). There is work to be done on these related words, but we may perhaps add *u-may-iiij-Ø* to our growing list of script derived transitive perfect-status verbs.

Given the innovative nature of Classic Ch’olan, one might readily suggest the diffusion of a new perfect from Ch’olan into Tzeltalan and K’anjobalan. But a least-moves model wants the innovation to have taken place before the breakup of Greater Tzeltalan. We have epigraphic data that argues for the presence of inflected verbs in some examples. Since all the verbs under discussion take *ji* and they all behave similarly, is it not safest to say they are all the same unless context—such as *k’ahl-aj mayij* and *y-otot u-mayij*—dictates otherwise? Furthermore, the presence in both Ch’ol and Ch’olti’ of *-ohel*, the CVC transitive gerund, not only argues for the existence in proto-Ch’olan of *-oj-el* but also invites a suggestion that the active perfect *-V-ej* may have existed contemporaneously in that language. This leads to a final question: might the presence of *-oj* and *-oj-el* in Colonial Tzeltal and *-oj-el* in proto-Ch’olan suggest that the development of gerundive *-oj-el* (as disambiguation from active perfect *-oj*) predated the breakup of Greater Tzeltalan? The historical position of the **-ej*, which in Classic Ch’olan may have formed participles from both root and derived transitives (as suggested by *yal-ej* and **’ila-ej > ’il-aaej*), remains to be determined.

The *-y-aj* Question: Was It There?

I turn briefly to the second of Robertson’s proposed nominalizers: *-y-a(j)* (presented in Stuart et al. 1999b; in Houston et al. 2001; and in this volume). There are a number of problems with this suggestion; I consider the salient ones. Two challenges to *-y-aj* on derived transitive verbs were briefly mentioned in an earlier section. One demanded consistency of spelling: how can *ji-ya* be both *-ij-yaj* and *-(V)j-iiy*? The other argued that the couplets with *ya* on the second member can only be explained in terms of a deictic inter-



Fig. 11.26. **pa-ti yi-pi-ya-je-la**, *pat-i-Ø yip-yaj-e(e)* 'was formed piling up/overflowing' (Yaxchilan Lintel 22, B2–B3; after drawing by E. von Euw).

pretation of the referent of *ya*. A derivational morpheme such as a gerundive should be present on both members or on neither, or there should be ample independent evidence that differing forms on the two members are compatibly parallel. That is not the case with **-ij* and **-ij-y-aj*.

I have found examples in the script of the antecedent of Ch'olan *-y-aj* (as I analyze it), thanks to a conversation with Simon Martin in March 1999 concerning king names at Copan and elsewhere. Several of these are focus antipassive constructions containing a variety of antipassive markers, including spellings of the name *K'ahk' Y-ip-i-y-aj Chan K'awiil* 'fire he fills/piles up in the sky *-k'awiil*' (a.k.a. Smoke Shell, a drab moniker in comparison). This contains spellings *ya-Ø* and *ya-ja* (with *ya-ja* dominating slightly) in half a dozen examples of this name (Figure 11.25). From Yukatek data **yip* may be reconstructed as a verb 'fill up'. While *yip* is transitive in Yukatek, in Ch'olan it may have been transitivized with usative/applicative *-i* and then antipassivized with *-y-aj*. Taking this together with the Early Classic Yaxchilan nominalized form *yi-pi-ya-je-le*, *yip-i-y-aj-el* (Figure 11.26), I suggested to Robertson (my personal communication, 1999) that the *-y-a(j)* he sought appears in these contexts, that it was recognized by Classic scribes as *-y-aj*, but was subject in certain environments to weakening of the final consonant (suggested by variation between *ya-ja* and *ya-Ø* in the king names), and that this weakening led, finally, to variable loss of the *-h* (formerly *-j*) in Ch'olti' and Ch'orti'. This parallels loss of *-h* on the *-a* of Ch'olti' passives. In contrast, the script derived transitive verbs have never once manifested the suffix as *ya-ja* or anything supplying a spelling of *-y-aj*. One case would speak volumes. If any environment is so tightly bound as to spur phonological simplification of *//y-aj//* to *ya*, it is the king names, where we see, in fact, evidence of both *-y-aj* and *-ya*.

Finally, Robertson's interpretation of the last 'capture' verb on Yaxchilan Lintel 46 (Figure 11.13) as the nominalized antipassive *u-chuk-ya(j)* creates a problem in cognition because it means we cannot know from context who did the capturing. In contrast, the interpretation of *ya* as the indicator of anterior deictic *-i-y* on an active root transitive verb makes the passage absolutely transparent ('he earlier captured "Etz'nab" *Sutz'*'). The back-referenced, long-ago event in which *Joy B'alam* took this captive is not mentioned earlier in this text. Classic Maya monuments are not, as a rule, ambiguous with respect to patient and agent unless critical parts of the texts are eroded or missing. Whatever follows on the missing part of Lintel 46 is unlikely to be critical. My answer to the *-y-aj* question

would be: yes, it is present in Classic texts, but it does not occur on the derived or irregular transitive stems. Syllabic *ya* on these verbs signals the temporal deictic clitic *-iiy*.

Conclusion

We may recall that Haviland (in Laughlin 1988: 108) has said of Colonial Tzotzil “stative verbs” (perfects) that they were used to “express a continuous state, regardless of whether the state is in the past.” Consider his example *y-elan-ej-Ø s-ba s-ti’ lok’ebal s-na x-chi’uk s-na X*, ‘the entrance to his house has faced itself with the house of X’. The action (‘faced itself’) that generated this state is complete, but its result—the facing-another-house state—is ongoing for as long as the first house stands. Another example given was *k-atin-ej-Ø j-ba ta ch’ich’* ‘I had washed myself in blood’. In this case, the action (‘washed myself’) is complete, and the subsequent state—one can only guess at its nature—had ongoing relevance to other circumstances not specified. All of it—original action and state—are in the past, as Haviland must have known from either translation or context. No tense is supplied by the Mayan perfect; one must infer tense from other information given in context.

There is also no visible completive/incompletive contrast on script plain-status transitives, a point made by Robertson (personal communication, 1999) and reiterated by Wald (personal communication, 2000), who, like myself, has decided that there is no morphologically marked past/present tense or completive/incompletive aspect in the script at all. Fortunately, there has been little need in this endeavor to set foot in the murky waters of script intransitives. But the perfect has an aspectual quality; it asserts that a completed action has continuing relevance in juxtaposition to other events. If I am correct, it would appear that the writing system regularly poses an opposition between certain unmarked plain-status intransitive verbs and the marked perfect-status transitive verbs that follow them. This contrast is independent of the deictic clitic *-iiy*, which is variably present. Furthermore, a plain-perfect opposition is archaic in the Mayan languages. In sum, the timelines of the Classic writing system—a topic well beyond the scope of this paper—appear to have had, as their primary nodes, dates and time counts, an anterior deictic clitic, and verbs—the latter in plain status, perfect status, and rarely in dependent and imperative status. One wonders, however, why there were not more plain-status derived transitives. We may consider the **u-TZ’AK-ka-b’u** (with no **ji**) example from Yaxchilan Lintel 46 (Figure 11.13) as one of these rare ones, and Alfonso Lacadena (personal communication, 2000) has suggested that forms like **yi-IL-la** and **u-tz’i-b’a** spell *y-il-a* ‘he witnessed it’ and *u-tz’ib-a* ‘he painted it’, respectively. I like this interpretation very much. As for the relative scarcity of plain-status derived transitives in the writing system, I can speculate only that derived transitives were a kind of “hot potato” in Classic Ch’olan formal narratives. They had to be handled with care and economy due to the argument baggage they brought with them, and they served specific ends. When marked as active perfects, they carried more political clout than plain status verbs, as I hope to argue momentarily.

It remains to clarify a point in translation of these verb sequences, and to step back for a moment to glean a bit of the “mentality, poetic concepts, and philosophical outlook” of the Maya from the grains sifted here. With regard to the former, Bob Wald (personal communication, 2002) observed after reading an earlier draft of this paper that we would

not say in English ‘it ended, his first winikha’ab in rulership, X; he has witnessed it, Y’; rather, we would place both verbs in past tense: ‘it ended, he witnessed it’. Or we might use the present perfect for both: ‘it has ended; he has witnessed it’. I agree that there is as yet no smooth translation that is also exact.

What broader purpose was served by the Classic Ch’olan perfect? We may find clues in contemplating the development of an active transitive verb from a perfect participle or gerund that emphasized resultant states; we may also find clues in the meanings of the verbs themselves—oversee, set in order, witness, consecrate, accompany. These are actions whose resultant states are the highest desiderata of royal charter and political alliance. The intransitive verbs that precede them most often specify single events—accessions, anniversaries, the casting of incense, closures of calendric cycles—whose ratification by ancestors, supernaturals, or representatives of superordinate polities gives rise to these stable outcomes. Even in less dramatic contexts—the display on polychrome vessels of scenes from myth, for example—the continuing reverberations of ancient speech may be reflected in the perfect *y-al-a(a)j-Ø-iiy*, ‘he has said it’, comparable to (if I may) ‘the tribe has spoken’, which carries far more clout than ‘the tribe spoke’. The so-called stela cult, that hallmark of Classic Maya civilization so dear to Thompson and his contemporaries, was an elaborate strategy for the public exhibition of durable contracts between the elite and their gods, their ancestors, their allies, and their subordinates. In teasing out the intricacies of syntax and morphology in these texts, we discern deeper layers of ancient Maya thought that clarify and enrich the stories they have left to us.

Acknowledgments

This paper took its present shape from many productive, sometimes passionate exchanges with John Robertson in particular, but also Terry Kaufman, Stephen Houston, Bob Wald, Marc Zender, Alfonso Lacadena, David Stuart, David Mora-Marín, Lloyd Anderson, John Justeson, Hutch Kinsman, Albert Davletshin, and all the Crabs and Glyphs “regulars” who kept me on my toes. I owe special gratitude to Søren Wichmann for many reasons great and small, and I extend wholehearted thanks to all.

TWELVE

The Grammar of the Half-Period Glyph

SØREN WICHMANN

University of Copenhagen

Introduction

The “half-period glyph” is a generic designation commonly used for a set of glyphic expressions that make reference to the spans of 10 *winikhaab*’ (“katun”) or 10 *haab*’ (“tun”), that is, halves of the major cycles *pik* (or *pih*) (“b’ak’tun”) and *winikhaab* (“k’atun”), in the long count. Work by David Stuart (Stuart et al. 1999b: 2–43) has proven the expression to be of a verbal nature. The lexical morphemes that enter into the half-period glyph are the adverb *tan* with the approximate meaning ‘half’ and the verb *lam* ‘to diminish’. Together the expression probably means something like ‘to half-diminish’. This paper demonstrates that this verb is among the grammatically most versatile in the inscriptions, as it turns up in both verbal forms as well as in a nominalized form, where it may be either unpossessed, alienably possessed, or inalienably possessed. In addition, an adjectivization is attested. The verb has not only clear characteristics of a CVC transitive but also patterns with the class of positionals in some respects. It is thus likely that the verb belongs to a class of ambivalent verb roots that may occur both as positionals and transitives. In the final section the syntactic environments that motivate the different morphological forms are discussed.

Graphic Variation in the Half-Period Glyph

The glyphic expression under investigation typically consists of two logograms, where the sign T606 is infixed to another sign. The decipherment of T606 as **TAN** was established by a **ta-na** substitution found by Stephen Houston (personal communication, 1987, to Stuart 1997: 8). The other sign in question has recently been read **LAM** by Stuart (Stuart et al. 1999b: 2–43). The full shape of the **LAM** sign and the fact that there are indeed two signs involved is revealed by instances where the two signs occur side by side (Figure 12.1). When this is the case there is usually a **na** complement to the **TAN** sign. The main interest in observing this, apart from determining the sound value of the logogram, is that a final phonetic complement will usually indicate a word boundary. In rare cases,

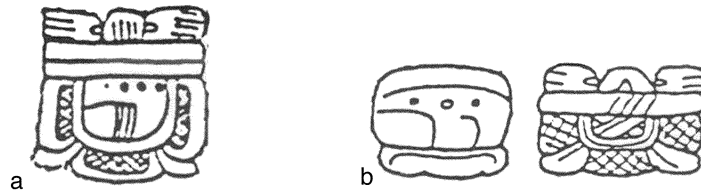


Fig. 12.1. (a) **[TAN]-LAM**, with **TAN** infixed into the **LAM** sign (Copan, St. A; after a drawing by L. Schele); (b) **TAN-na LAM** (Jimbal, St. 2; after a drawing by an unidentified artist in Schele and Grube 1995: 198).

however, such as the seating expression, sometimes spelled **CHUM-mu-la-ji** or **CHUM-mu-wa-ni**, a phonetic complement with a silent vowel may occur word-internally. So, unlike disharmonic complements,²²² harmonic complements are not necessarily restricted to word boundaries. It is difficult, then, to decide whether we are dealing with one or two words, but the morphological observation that the two morphemes are inflected and derived as a unit in such expressions as *u-tan-lam-il* suggests that the compound forms a word.

The decipherment of the half-period glyph

The function of indicating the completion of half a calendrical period was first identified by Goodman (1897: 99) and confirmed by Morley (1917). Thompson (1971: 192–94) provides a summary of contemporary insights about the graphic variation, shape, and function of the glyphic expression. Part of the expression, the logogram **TAN**, was deciphered around 1987 as already mentioned, but it was not until 1999 when David Stuart (Stuart et al. 1999b: 2–43) proposed the reading **LAM** for the second of the two logograms that typically enter into the expression, that a full phonetic decipherment became available.

Although the decipherment of the expression *tan-lam* is not given in Stuart et al. and was not presented along with the new reading at the 1999 Texas Maya Hieroglyphic Forum, the reading appears to be based on a substitution in the name of a Río Azul king, *K'ihnich Lama'w Ek'*, whose substitution pattern includes both a logogram (the proposed **LAM**) on K5022 (Kerr 1989–2000) and a phonetic spelling *la-ma-wa-EK'* on the vessel K7720 (Kerr 1989–2000; Marc Zender and Erik Boot, personal communication to the author, 2000). In any case, the grammatical observations in this paper are valid independently of the meaning and exact shape of the verb.

The form *tan*, more precisely *ta[h]n*, is attested in the lowland languages with meanings ranging from 'chest' to 'front' and 'face'. For Ch'orti' (Wisdom 1950b) it is attested as *tahn* 'inner side or surface of, center, interior, concave side of'. This entry is crucial for

222. An example where the presence of complementation may help to identify a word boundary is the **KAL-ma-te**, *kalo'm te'* expression. Here the complement vowel *a* is in disharmony with the under-spelled *o* vowel, in a pattern that indicates glottalization. If the Mayas intended just one word, the form would more likely have been spelled **KAL-lo-mo-te**, because a vowel that is synharmonic with a spelling internally may be deleted, whereas a disharmonic vowel may not.

the interpretation of the glyphic text, since it shows that Classic Ch'olan *ta[h]n* may also mean 'center' or 'middle'. For ease, I shall be using the broad transliteration *tan*.

The root *läm* means 'diminish' in Ch'ol and is likely related to *lam* in Yucatecan, which means 'to sink'. There are possible cognates in Eastern Mayan languages like K'iche' and Teko, but their meanings are so far removed from those of the languages just mentioned that we cannot be sure that they are actually related. In addition, their meanings do not fit the semantic contexts of the half-period glyph (see below for the linguistic data). We should in any case, all else being equal, prefer to use the Ch'ol data in our interpretation since we know that the language of the inscriptions throughout the southern lowlands was an early form of Ch'olan (Lacadena and Wichmann 2002; Houston et al. 2000).

LINGUISTIC DATA:

Chol	<i>läm</i> (t.v.) 'calmar (enfermedad) ²²³ (Aulie and Aulie 1978) <la:m-el> 'pass, recede, diminish, improve, heal' (Attanasi n.d.: 287)
Yucatec	<i>lam</i> (t.v.) 'to penetrate, sink, push in /buttons on machine/' (Bricker et al. 1998: 164) (a transitive form with similar meaning is found in colonial sources cited in Barrera Vásquez 1995: 438) <i>lam-al</i> 'hundirse o sumirse en el agua, o en cosas blandas y emboscarse' (Arzápalo Marín 1995: 1859) (other colonial sources similarly exhibiting an intransitive form of the verb are cited in Barrera Vásquez 1995: 438)
Lacandon	<i>k-u-raam-än</i> 'se sumbe' (dentro de un envase) (Canger 1970)
Tzotzil	<i>lam</i> (t.v.) 'cover oneself, apply compress' (Laughlin 1975) <i>lam</i> (i.v.) 'be eased (pain), be mended (roof)' (Laughlin 1975)
Teko	<i>lam</i> 'to close, shut' (Kaufman 1969)
K'iché	<i>lam</i> (v.) 'to stop, impede' (Edmonson 1965)

The data from Chol and Yucatec, as well as the forms from Tzotzil, if both of those forms are related, all contain both transitive and intransitive forms. This makes it likely that there was some variability with respect to transitivity at the early Ch'olan linguistic stage represented by the inscriptions. In fact, I would suggest that there was, although the types of verb involved seem to have been a transitive and special kind of intransitive, namely a positional.

The Derivational Paradigm of (*tan*)-*lam*

Up to this point the two morphemes *tan* and *lam* have been discussed in isolation from their morphological context. Part of the aim of the paper, however, is to discuss their morphology. I have observed the patterns listed in Table 12.1.

223. A form that seems to be related to the verb *läm* 'calmar' is *läm-p'ehl* 'ten', but the resemblance is probably fortuitous, because the latter form is likely to be a descendant of a form that may be reconstructed as proto-Mayan **laju'ng*. While the exact shape of this reconstruction requires more arguments, we can at least be quite certain that the proto-Mayan word for 'ten' should consist of two syllables and would have a shape different from *lam*.

TABLE 12.1. The Derivational Paradigm of *(tan-)lam*

PART OF SPEECH	MORPHOLOGICAL SUBCATEGORY	WITHOUT PREPOSITION	WITH PREPOSITION
VERB	Antipassive	<i>tan-lam-a'w</i>	<i>ti-tan-lam-a'w</i>
	Positional	<i>tan-la[-h-]m-aj</i>	
NOUN	Unpossessed nominalization	<i>lam</i> <i>tan-lam</i>	<i>ti-tan-lam</i>
	Alienably possessed nominalization	<i>u-lam</i> <i>u-tan-lam</i>	<i>t-u-tan-lam-i</i>
	Inalienably possessed nominalization	<i>u-tan-lam-il l</i>	
ADJECTIVE	Adjectivization	<i>tan-lam-al</i>	

Each of the morphological subcategories is characterized by certain affixes, some of which have only recently been identified. They are briefly described below. A discussion of the role of the preposition in the *ti* + NOUN constructions is also given, and *ti* + VERB constructions are discussed in the section preceding my conclusion.

An antipassive morpheme spelled glyphically by means of **wi** or **wa** signs suffixed to logograms of verbal nature has been identified by Lacadena (2000) as identical in shape with an antipassive suffix reconstructed for proto-Mayan as **-V(w)* by Smith-Stark (1978). On the basis of glyphic expressions of the type **tz'a-pa-wa-TUN-ni**, **CHOK-wa-ch'a-ji**, **CH'AM-wa-K'AWIL** (or **CH'AM-wi-K'AWIL**), and **K'AL-wa-TUN** (or **K'AL-wi-TUN**) Lacadena proposes that *-(V)w* is an object incorporation antipassive. He also points out that the same suffix may also have the function of an absolutive antipassive, citing tentative evidence from the rather eroded monuments Calakmul St. 33 and Caracol St. 6, where the verb 'to scatter' appears without an ergative prefix and where no objects follow. The suffix material in these examples is hard to identify because of weathering, but Lacadena suggests that the suffix represented by the damaged signs in both cases could be *-(V)w*. If this is the case there would be evidence for an absolutive antipassive. The function of the absolutive antipassive is to turn the former transitive subject (A) into an intransitive subject (S) and delete the former object or demote it to an oblique. If, indeed, spellings of the type **TAN-LAM-wa** represent a verbal form it is unlikely that they can be anything but the absolutive antipassive. Such spellings are never followed by an expression that could represent an incorporated object, so they provide new evidence in favor of Lacadena's hypothesis that the *-(V)w* suffix may function not only as an object incorporating antipassive but also as an absolutive antipassive. I have rendered the suffix with a glottal stop. The explanation for this phonological feature is found in Lacadena and Wichmann (n.d.); it does not represent a grammatical reinterpretation.

Let us turn to spellings of the type **TAN-LAM-ja**, which I very tentatively suggest could be positionals. It is widely accepted that one of the morphemes spelled by a glyphic **ja** is part of passive morphology. A "passive" suffix *-aj* was recognized by Bricker and Schele (cf. Schele 1982; MacLeod 1984; Bricker 1986). Lacadena (this volume) adds pre-

cision to the identification, arguing that *ja* itself does not spell the passive, but actually represents the thematic suffix of derived intransitives, *-aj*, whereas the element that really represents the passive is an infix *-h-*, which is not represented in the spellings. Thus, conceivably the **TAN-LAM-ja** spellings on Tikal St. 31 could represent passives. The syntax renders this unlikely, however, because the subject of the passive would be the one “b’ak’tun” expression, **1 PIK (PIH)**. But it is not a “b’ak’tun” that is halved. As an alternative, although a very tentative suggestion, one might consider that *lam* in these cases functions as a positional root (more arguments to the effect that *lam* is also a positional are given below) providing an example similar to the one from the Hombre de Tikal monument discussed by Lacadena (this volume) of the early use of *-h-...aj* with positionals. If this suggestion is correct, the ‘one “b’ak’tun”’ expression is the subject of the intransitive and the paired god-names extensions of the expression of the subject.

Unpossessed nominalizations of the verb ‘to diminish’ are represented by the bare root form *lam* occurring either alone or with the modifying adverb *tan*. The only other clear case where nominalization is achieved by null derivation is that of incorporating verbal structures. This has an exact parallel in modern Ch’orti’ (cf. the following example):

<i>u-pak-i-Ø</i>	<i>e</i>	<i>nar</i>
3sE-double.over-THEM-3sB	DET	cornstalks
‘He doubled over the cornstalks’		
<i>pak-nar-i-Ø</i>		
double.over-cornstalk-THEM ²²⁴ -3sB		
‘He doubled over cornstalks’ (lit., ‘He cornstalk-doubled’)		
<i>pak-nar</i>		
cornstalk-double.over		
‘Cornstalk-doubling’		
<i>u-pak-nar</i>		
3sE-double.over-cornstalk		
‘His cornstalk-doubling’		

The last form, *u-pak-nar*, which is the possessed zero nominalization, is paralleled by several examples in the inscriptions, such as:

u-tzap-tuun ‘his stone-planting’
u-k’al-tuun ‘his stone-binding’
u-ch’am-k’awiil ‘his *k’awiil*²²⁵-taking’

224. The suffix *-i* is homophonous with the thematic suffix for CVC transitives, but must be considered a separate suffix, specialized in the function of deriving incorporating verbs. An apparent homophonous “antipassive” *-i* is mentioned by Fought (1972: 41). This suffix, however, does not exist. The single, putative example *ak’ani* ‘he wants’, which is the one Fought refers to, is the result of a mistaken analysis of *tya’ k’ani* ‘where he wants to . . .’ as *tya’ ak’ani* (cf. Fought’s analyses of his texts at 2.113 and 2.160).

225. If, indeed, *u-ch’am-k’awiil* is an incorporating structure, *k’awiil* must be interpreted as having nonreferential, indefinite reference, since referential or definite NPs cannot be incorporated. Thus, *k’awiil*

One might suppose that the adverb *tan* in *tan-lam* could effect the possibility of zero derivation like the incorporated objects in *u-k'al-tuun*, etc. Might it be possible that there is a more general rule according to which any incorporating structure, including structures with incorporating adverbs, allows for nominalization by zero derivation? The argument against such a hypothesis is provided by instances where *lam* occurs in its bare-root form, not accompanied by *tan*. The clearest example of this is found on Naranjo, St. 25 (D10). There are other cases where the nominalized form *lam* is possessed, such as Copan St. 15, where *u-lam* appears at least once, perhaps twice.

The instances where *lam* occurs without *tan* are in a minority. The great majority of unpossessed nominalizations include *tan*. Indeed, the form *tan-lam* 'it was the half-diminishing' is the most frequent of all the variants as a whole of the half-period expression. The syntactic patterns found are:

DATE *uti tanlam*

'on DATE the half-diminishing happened' (DPL H.S. 4, Step II; Laguna Perdida; UAX St. 26, Back; CPN Alt. Q; QRG St. F, West [a variant: *u[h]ti ti tanlam*])

DATE *uto'm tanlam*

'on DATE the half-diminishing will happen' (DPL Stairs; CPN Alt. H')

10-“k'atun” *iyuwal tanlam*

'it was 10 k'atun and then came the half-diminishing' (CPN St. J)

DATE *tanlam*

'on DATE (it was) the half-diminishing' (NAR St. 25; PNG St. 4, left; SBL St. 7; PAL Pal. Tabl., N10; BLK St. 5)

VERB(S) *ti tanlam*

'[verbal action(s)] on the half-diminishing' (CPN St. A; JMB St. 2; NAR St. 13, 22, 24, 31 [Back])

To sum up, there are clear instances of unpossessed nominalizations as well as possessed transitives and nonpositional intransitives achieved by zero derivation. All four basic, logical possibilities are found: *lam*, *tan-lam*, *u-lam*, *u-tan-lam*.

As already indicated, the nominalized forms may be possessed. We have already seen one type of possession. But there are two kinds of possession: alienable and inalienable possession. The morphological difference is that alienable possession is achieved by prefixation of the ergative marker and no further changes, whereas inalienable possession in addition to the ergative marker requires a suffix *-il*. The half-period glyph is excellent for illustrating the semantic difference signaled by these two morphological processes. It turns out that whenever the possessor is human, the *-il* is absent, but when the possessor is the time-period that is diminished, the *-il* is required.²²⁶

cannot be a god-name in these contexts, or else the analysis is wrong. Freidel et al. (1993: 444, n. 45) cite different linguistic sources, including sixteenth-century Poqom <ih cam cavi> 'one who carries the figures of the gods', which supports the idea that *k'awiil* may also refer to god images and not a specific god. (Cf. also Davletshin (in press) for a relevant discussion of the relationship between scepters and gods.)

226. Houston et al. (2001) discuss the *-il* suffix on possessed nominals, dividing its functions into

The pattern where the possessor is a human is seen on Palenque, East Tablet, Temple of the Inscriptions. In other cases we can infer the presence of a human possessor even if the monument is damaged in the critical places (NAR St. 31, Front, A3; CPN St. 15; CPN inscribed cylinder).

When the possessor is a time period, this time period is usually designated by its last date in the 260-day period, if not the whole calendar round date, as in the following examples:

- <*u-tan-lam-il* 2 *ajaw* (=9.3.10.0.0) (UAX St. 22, B3)
 VERB *t-u-tam-lam-il* 8 *ajaw* (=9.12.10.0.0) (CPN St. 6)
 VERB *t-u-tan-lam-il* 8 *ajaw* (=9.6.10.0.0) (TUL St. 1)

The pattern according to which *tan-lam-il* is always followed by a period glyph may perhaps shed some light on the “bird-man glyph” occurring on the stucco inscription from Temple XIX at Palenque; this is associated with the date 9.13.17.9.0, which lies half a *hotun* before the period ending 9.14.0.0.0 (Stuart 2000a: 14). Stuart notes a similar glyph following the expression *u-tan-lam-il* in association with the date 9.14.12.9.0 on an undesignated Tonina stela. He suggests that here it occurs as a “verb or predicate” and “somehow describes some general characteristic of the date.” It seems that it ought to refer directly to a time-span, although it is confusing that in the Palenque case it seems to refer to *half a hotun*, whereas in the Tonina case it seems to refer to a *whole hotun*, given that this is the span of time needed for a half-diminishing to produce the date 9.14.12.9.0.

The last kind of derivation is one that produces an adjective. The single existing example of this is found on Copan St. P. There the text seems to say:

TZUTZ-ja	/	TAN-na / LAM-la	/	LAKAM-TUN-ni
<i>tzut-h-tz-aj-Ø</i>		<i>tan-lam-Ø-al</i>		<i>lakam tuun</i>
finish-PASS-THEM-3sA		half-diminish-NOM-ADJ		banner stone
‘The half-diminished banner-stone was finished’				

The context for this expression is odd because the verb *tzutz* is usually not found with other patients than time periods. Here it seems to refer to a monument. Nevertheless, there is little doubt about the interpretation of *tan-lam-al* as an adjective that qualifies the composite noun, *lakam tuun* ‘banner-stone’. An adjectival suffix *-VI* was identified in Houston et al. (2001). Although the authors do not provide the specific example that we are discussing here, it fits well their list of *-VI*-carrying forms, some of which are *tu-witz-il* ‘on his hilly (place)’, *kab’-al-k’uh* ‘earthly god’, *k’uh-ul* ‘holy’, *pohp-ol chay* ‘mat-like fish’.

three categories, one of “partitive possession,” where the possessum is part of the possessor (as a door is part of a house), so-called other-worldly possession where the possessor typically is a supernatural entity, and finally a class of miscellaneous items. It is difficult, however, to decide whether the instances of *u-tan-lam-il* are cases of partitive or other-worldly possession. Some such subcategory as the “inanimate possession” discussed by Laughlin (1975: 25) may also be represented in the inscriptions. Any subcategorization of the category marked by *-il* will necessarily be a matter of interpretation with a certain amount of speculation involved.

Generally the forms that are being adjectivized are nouns. In the case of *tan-lam-al* we are also, apparently, confronting a nominal, *tan-lam*, that is derived into an adjective by means of the vowel-harmonic *-Vl* suffix.

The Syntactic Context of Half-Period Statements

We now move beyond the description of the morphological patterns of the half-period glyph and try to explain some of the syntactic patterns found.

Coordination

Mora-Marín (1998) gives an excellent overview of the syntactic motivation for intransitivization processes in Mayan languages. A pattern commonly found is the pairing of morphological ergativity with syntactic accusativity. That is, morphologically it is common to treat subjects of intransitive verbs (S) and objects of transitives (O) identically and different from subjects of transitives (A). Syntactically, however, subjects of transitives and intransitives may be aligned in opposition to objects. Mora-Marín notes that some Ch'olan and Yucatecan languages operate with an S/A pivot for purposes of interclausal coordination. He also notes, however, that some other Mayan languages, such as Jakalteko and Tz'utujil, are even more restricted, requiring an S/S pivot. That is, in these languages neither As nor Os are tolerated in clause coordination. As a consequence, any transitive verb is disallowed and must be intransitivized before entering into clause coordination. The question for the linguistic epigraphy of Classic Maya texts that rise out of such observations is what kind of constraint, if any, applies to coordination in Classic Ch'olan.

The examples of coordination involving verbal forms of the half-period expression all show the coordination of sentences with an S/A pivot, where the order of the verbal subjects in the two or more coordinated sentences is S-A or S-A-A, viz.:

3-AJAW 3 "MOL" TAN-LAM-wa u-CHOK-wa CH'AJ-ji . . .

3 Ajaw 3 "Mol" *tan-lam-a'w-Ø u-chok-o'w-Ø ch'aj NP*

'On 3 Ajaw 3 Mol he half-diminished, he (NAME) scattered drops' (Aguateca St. 1)

DATE TAN-LAM-wa u-10-TUN u-K'AL-wa-TUN u-CHOK-wa ch'a-ji . . .

DATE *tan-lam-a'w-Ø u-10-tun, u-chok-o'w ch'aj*

'On DATE he 10th-*tuun*-half-diminished, he bound the stone, he (NAME) scattered drops' (Ixlu Alt. 1)

DATE . . . TAN-LAM-wa u-CHOK-wa ch'a-ji . . .

DATE *tan-lam-a'w u-chok-o'w-Ø ch'aj NP*

'On DATE he half-diminished, he (NAME) scattered drops' (Tonina, M. 104)

In the instances where the half-period expression enters into coordination it is clear that an S/A pivot is preferred. The consistent order of the S and A is surely not a coincidence. Du Bois (1985, 1987b) has observed that in the structure of discourse a new discourse entity will almost invariably be introduced in S function, not only in ergative languages but

also in languages in general. Clearly there are deviations from the pattern when one moves beyond just those examples that involve the half-period expression, but elucidating which patterns are the more generally preferred would involve a larger study, including a discussion of Mora-Marín (this volume) and a critical examination of his analyses, something that is beyond the scope of this paper.

Subordination

At this juncture I venture the hypothesis that constructions of the type *ti tan-lam-a'w* are complement clauses expressing purpose. This interpretation is grounded in the fact that these clauses always occur in close association with another clause as well as the existence throughout the Mayan languages of a construction type $\text{CLAUSE}_1 + \text{PREPOSITION} + \text{CLAUSE}_2$, where CLAUSE_2 is a purpose complement. The clearest²²⁷ contexts for *ti tan-lam-a'w* clauses are the following:

DATE *u-chok-o'w ch'ah ti tan-lam-a'w* NAME (CRC Alt. 12)
 DATE *ti-tan-lam-a'w u-chok-o'w ch'aaj* LOC. NAME (DPL St. 15)

Apart from the order of the clauses (and phonological differences in the word ‘drops’²²⁸) the two examples are identical. I would suggest that they be translated ‘he scattered drops in order to half-diminish’. The interpretation of the *ti tan-lam-a'w* clause as a purpose complement is based on parallel structures in various Mayan languages constituted by (1) a verb, (2) a preposition functioning as complementizer, and (3) an intransitivized or nominalized verb, for example:

CH'ORTI'

<i>u-w-otz'-i-Ø</i>		<i>u-b'ujk</i>			
A3-?-THEM-3A		A3-clothes			
<i>che</i>	<i>ke'</i>	<i>twa'</i>	<i>a-kor-m-a</i>		<i>u-jut</i>
QUOT	SUB	SUB	C3-undress-AP-THEM		A3-surface
‘he (?) his clothes, they say, so his body would become nude’ (Fought 1972) ²²⁹					

227. I exclude from the discussion the following two examples from Caracol: DATE *u-chok ti tan-lam-a'w* (CRC St. 6) and DATE *u-k'al-tuun ti tan-lam-a'w* NAME (CRC Alt. 23). A bare form *chok* with no derivational material, as in the first example, is unexpected, and in both examples nonverbal predicates seem to be followed by antipassives. The problem in both cases is that the main verb is not tensed while the complement is. This is not the way languages usually behave. Another strange construction type is CR *k'al-tuun ti tan-lam* NAME (NAR St. 24, E15-D16), where NAME seems to be the S although I would normally interpret *k'al-tuun* as a nonverbal predicate. It is not clear whether VERB-NOUN compounds with no glyphic *wa* are nonverbal predicates from nominalized incorporating verbs or, as the Naranjo example would suggest, incorporating (but otherwise underived) intransitive verbs.

228. The Caracol example has the spelling *ch'a-ha* with reduction of vowel length, a dialectal development characteristic of eastern inscriptions (Houston et al., this volume; Lacadena and Wichmann 2002), as well as neutralization of the /h/ : /j/ distinction, also not unexpected (cf. Grube, this volume).

229. In Fought this is, for unknown reasons, mistranslated “he took off his clothes, they say, to go fishing.”

TZOTZIL

kolta-[o]-on ta s-t'ox-el j-si'
 help-imp-B1sg prep A3-split-el A1-firewood
 'Help me split my firewood' (Aissen 1987: 16)

TZ'UTUJIL

xinpit ch atz'ejtiik
 B1-came to your-being-seen
 'I came to see you' (Dayley 1985: 383)

Conclusion

This study has shown that the preferred way of expressing half-period statements is by impersonal, nominal constructions. If the agent of the change of time is a human, this agent may be introduced as a possessor. The resulting linguistic expression is an alienable possession. If the change of time is construed as belonging to the greater period that is "half-diminished," this period may also be introduced as possessor, but in this case the construction is one of inalienable possession, requiring the suffix *-il*. This grammatical fact perhaps provides a little window into the way the Maya thought about time: although humans may perform rituals that secure the change of time periods, time cannot be viewed as an intrinsic part of humans. Time is only intrinsically a part of time itself.

Based on the different verbal morphology associated with the half-period glyph, we have identified *lam* as a verb of a type that is known to occur in a Ch'olti' as well as in other Ch'olan languages and beyond, but that has hitherto received little attention in linguistic epigraphic studies, namely the class of ambivalent positional-transitive verbs.

The strongest argument for the status of a transitive is, as we have seen, the antipassives. There can be little doubt that the instances of **TAN-LAM-wa** spellings indeed represent antipassives. Not only is there no other candidate with this kind of morphology in the modern, attested languages but the antipassive also conforms to our expectations. The examples of *tan-lam-a'w* would be the best to date of absolutive antipassives. It is interesting that the antipassive of the half-period glyph occurs only in coordinated and subordinated constructions. Foley and Van Valin (1984: 289) remark on the Jakalteko antipassive constructions in *-n(i)* that they "are possible only as part of certain syntactic processes." If it can be shown that this is also the case for the *-V'w* antipassive in general in the Maya inscriptions, it is a significant step forward in our understanding of the syntax of the Classic Maya script, but that piece of research would exceed the limits of the present paper.

Many Mayan languages exhibit an S/A pivot requiring a constituent that is to be coordinated or subordinated to appear in an S or A function, so it is not surprising that we have found in the examples involving the half-period expression that the preferred coordinate constitutions are in S and A functions. The order of these (S-A or S-A-A) is explained by the tendency for ergative languages and languages in general to introduce a new discourse entity in non-A function.

Apart from providing insights into coordination, the half-period expression sheds light on subordination, specifically purpose complements. It appears that purpose clauses

in Mayan languages often have the structure preposition + intransitivized/nominalized verb and that this type of construction is represented in the Classic inscriptions by constructions of the type transitive verb + *ti* + *tanlama'w*.

In sum, the half-period expression provides an exceptionally rich area for testing old and introducing new hypotheses about the morphology, syntax, and discourse structure of the Classic period Ch'olan inscriptions.

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THIRTEEN

The Preferred Argument Structure of Classic Lowland Mayan Texts

DAVID F. MORA-MARÍN

University of Kansas at Lawrence

Introduction

The work on discourse structure in Sakapultek Mayan by Du Bois (1987a, 1987b) has led him to propose a Preferred Argument Structure (PAS) characterized by a series of constraints on the quantity, role, and form of core clausal arguments (A, transitive subject; S, intransitive subject; O, transitive object). This proposal has found substantial support from research on other languages, Mayan and non-Mayan. The constraints are in part dictated by pragmatic factors of discourse structure (e.g., new mentions, topic continuity), as well as by semantic (e.g., definiteness, animacy) and stylistic (e.g., repetition, parallelism) factors (e.g., Hofling 2002; Martin 2002). Such work could have important implications for the decipherment and interpretation of Classic Lowland Mayan (CLM) hieroglyphic texts (A.D. 200–900).

In this paper I examine clausal argument structure and information flow in a set of CLM texts from the site of Palenque, Chiapas, Mexico. The purpose of the exercise is twofold: to determine to what extent CLM texts exhibit the PAS defined by Du Bois and other linguists, and to assess the usefulness of this approach to the decipherment and interpretation of the ancient texts. I begin by summarizing the PAS. I continue with a brief overview of what is known about the grammar and linguistic affiliation of CLM texts. Next I describe the methods used to determine the PAS in a set of CLM texts, and then discuss the overall results and compare them with those by Du Bois (1987a, 1987b), England (1986, 1988), Hofling (2002), and Martin (1987) for other Mayan languages. And last, I discuss some of the morphosyntactic and stylistic processes used to comply with the PAS in CLM texts. As I show here, CLM texts exhibit a PAS that conforms to that defined by Du Bois, and such realization could prove of great use in the decipherment, translation, and interpretation of CLM texts.

Preferred Argument Structure: Preliminaries

Du Bois has used narrative texts from Sakapultek (Greater K'iche'an) to propose the existence of a Preferred Argument Structure (PAS) characterized as follows: (1) a preference for one lexical argument per clause, whether the clause is transitive or intransitive; (2) a preference for lexical arguments in S/O roles; (3) a preference for the introduction of new information as lexical S/O arguments; (4) a preference for the expression of given/topical information as lexical S/A arguments; and (5) an avoidance of more than one new lexical argument per clause. He summarizes it thus (1987b: 829):

(1)	GRAMMAR	PRAGMATICS
QUANTITY	One Lexical Argument Constraint	One New Argument Constraint
ROLE	Nonlexical A Constraint	Given A Constraint

One of the consequences of this PAS may be a functional preference for intransitive clauses (about 60 percent in the texts used by Du Bois) over transitive clauses (about 40 percent) (Du Bois 1987b: 830). Du Bois points out that, in Sakapultek, intransitive clauses are more prevalent in the introduction of new human referents, and that the total proportion of human mentions, whether old or new information, gives preference to A (37.5 percent) and S (36.1 percent) roles, not O roles (3.4 percent). He also shows, using the evidence from Sakapultek and other ergative and nonergative languages, that there is a greater distribution of new information in S/O roles (absolutive) and of old information in S/A roles (nominative).

Du Bois summarizes similar results reported by several authors for other languages, Mayan or non-Mayan, syntactically ergative or syntactically accusative. He describes England's results for Mam as follows (Du Bois 1987b: 837): "only 1% of all clauses have two lexical arguments, while 3% have a lexical A; just 2% of new mentions (one instance) occur in A position." Hofling (2002: 3) reports for Itzaj only 1.8 percent of clauses with two lexical arguments and a preference for S/O lexical arguments. The total proportion of clauses with zero lexical arguments is 60.3 percent, with one lexical argument in S role 18.8 percent, with one lexical argument in A role 3.7 percent, and with one lexical argument in O role 13.2 percent. Hofling (2002: 12) notes that "the bulk of animate reference is accomplished pronominally." This applies to both transitive and intransitive clauses. He also points out that animate mentions are more frequent in S role, followed very closely by the A role.

Classic Lowland Mayan Script: Overview and Assumptions

CLM texts are now generally agreed to represent at least one Ch'olan Mayan dialect or language, but perhaps more (e.g., Houston et al. 2000; Justeson and Campbell 1997; Justeson and Fox 1989; Lacadena and Wichmann 2000; Mora-Marín 2003). This is becoming more and more apparent even in the face of evidence showing that some of the scribes may have been native Yucatekan speakers (Justeson and Fox 1989; Lacadena and Wichmann 2002).

Like Mayan languages generally, CLM texts exhibit a VOA/VS basic word order, with a few examples of marked word order of the type AVO, OVA, and SV (Bricker 1986;

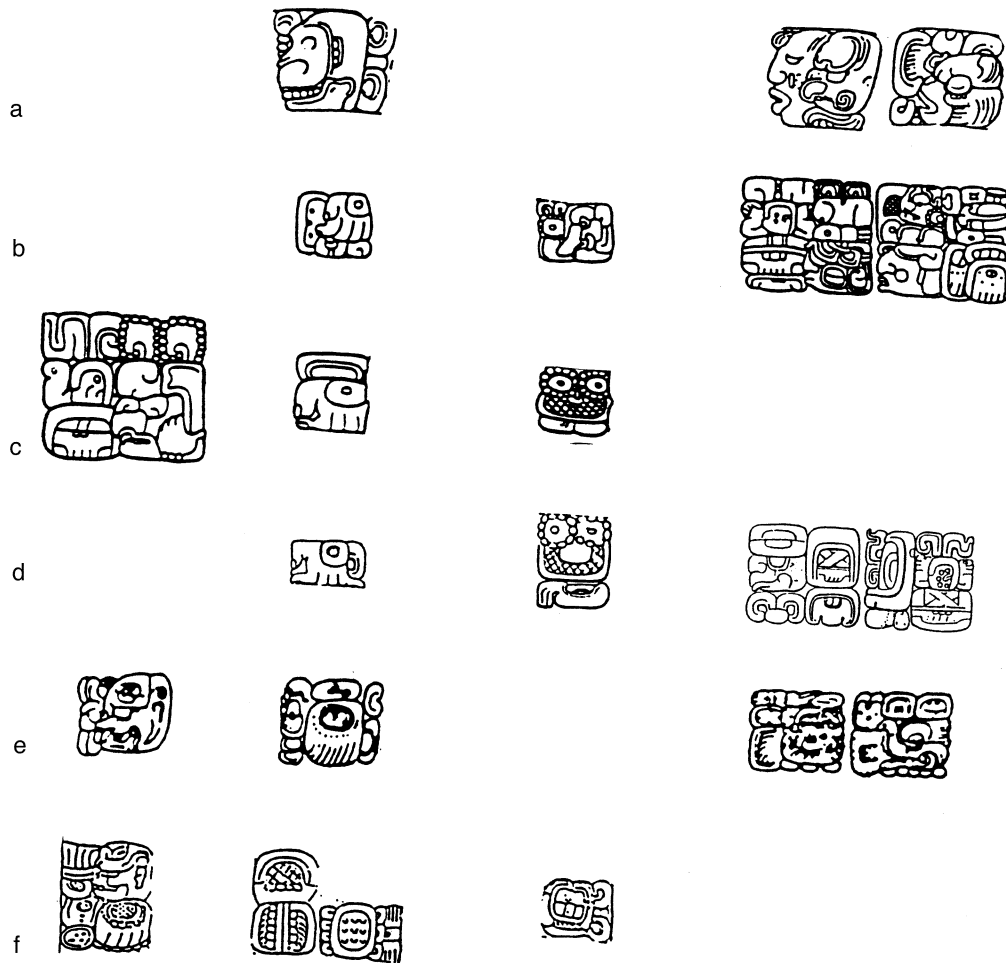


Figure 13.1. Attested word-order types in Classic texts. (a) VS: **CHAM-ya** (V) **ix-TUN(-ni)-ka-ya-ka-wa** (S) 'Lady Tun Kaya-kawa died'. Drawing of Tikal Altar 5 in Jones and Satterthwaite (1982). (b) VOA: **u-CHOK-wa** (V) **ch'a-ji** (O) [Copan Lord] (A) '[Copan Lord] threw down incense'. Drawing of passage from Quirigua Stela D by Matthew Looper. (c) AVO: [Copan Lord] (A) **u-CHOK-wa** (V) **ch'a-ji** (O) '(It was) [Copan Lord] (who/that) threw down incense'. Drawing of passage from Quirigua Stela B by Matthew Looper. (d) V=OS (Antipassive clause): **CHOK-wa** (V) **ch'a-ji** (O, incorporated) [Copan Lord] (S, former A) '[Copan Lord] incense-threw'. Drawing of passage from Quirigua Stela E. (e) OVA: **ha-i** (O) **u-b'u-t'u-wa** (V) [Palenque Lord] (A) 'As for him, [Palenque Lord] buried him'. Drawing of passage from Palenque Palace Tablet by Linda Schele. (f) AVO: **ha-o-b'a** (A) **pa-sa-no-ma** (V) **wa-ya** (O) 'It is they who would open the w(ā/a)y'. Drawing of passage from Copan Stela A by Barbara Fash.

Brody 1984; England 1991; Hofling 1984; Mora-Marín 2000a; Schele 1982), as seen in Figure 13.1. Verbs show an ergative-absolutive cross-referencing system, possessed nouns cross-reference their possessors with the same markers that cross-reference transitive subjects on verbs.²³⁰ Three main types of verbs are marked: transitives, intransitives, and

230. It is possible that split-ergativity, or processes that may have led to split-ergativity, may be present in a few examples (e.g., **u-CHOK-no-ma**, possibly for *u-chok-n-om*, where an apparent antipassive suffix *-n* is present at the same time as an ergative prefix *u-*), but more data is necessary to confirm this.

positionals. Intransitives can undergo causativization with *-esa* (Zender 1999) and transitivization with *-t* (Fox and Justeson 1984; MacLeod 1993).²³¹ Positionals may undergo transitivization with *-b'u ~ -b'a* (Houston et al. 2000; Zender 2000a). Transitives may undergo passivization (O > S, A > oblique) with *-h-* (Bricker 1986), absolutive/agentive/incorporative antipassivization (A > S, O > incorporated/omitted) with *-(a)w* and *-(a)n* (Lacadena 2000; Mora-Marín 1998), and (re-)transitivization with *-t* (described by Barbara MacLeod in examples like *kuch-t-aj*, based on a root transitive verb *kuch*). Action nouns (e.g., *ahk'ot* 'dance') can undergo intransitivization with *-a(j)* (Lacadena, this volume), and other nouns (e.g., *ajaw* 'lord, ruler', *chan* 'sky') can also be derived into inchoative verbs with *-an* (Bricker 1986).

Because of the importance of intransitivization construction in maintaining the PAS in discourse in Mayan languages—and as I show here, CLM texts are no exception—I hereby provide a typology of antipassive constructions, which is illustrated in Figure 13.2 (cf. Lacadena 2000; Mora-Marín 1998, 2000a).²³²

(2) a. ABSOLUTIVE/INCORPORATIVE (Omitted/incorporated O)

TV-wa/wi ± ONP ± ANP

TV-w-ABSi(+a/i) ± ONP[-def] ± ANP_i

b. ABSOLUTE (Oblique O)

TV-na/ni + ti + ONP ± ANP

TV-n-ABSi(+a/i/o) + ti + ONP[+def] ± ANP_i

c. AGENTIVE (A PRO(noun) fronted, O omitted/unaffected)

ha-(V)(-b'(V)) + TV-wi/no ± ONP

ha'-ABS_i(+ENCL) + TV-w/n-ABS_i(+ENCL) ± ONP[±def]

d. NOMINALIZING (Omitted/incorporated O, ± possessed by A)

MAIN.VERB + (ERG_i-)TV-wi ± ONP ± ANP

VERB-(i-)Ø_i + [(ERG_i-)TV-w(-i)] ± ONP[-def] ± ANP_j_i

Josserand (1991, 1995) and Josserand and Hopkins (2000) have shown that the discourse structure of CLM texts reflects the structural units of most modern Mayan languages: events, episodes, event-line, background (scene-setting, back-referencing), and

231. To my knowledge Zender (1999) does not see the cases of *-esa* (e.g., *yu-k'e-sa*) as finite causative verbs but instead as nominalized causative verbs with a zero morpheme as the nominalizer. Based on their syntactic context, a purely finite verbal function can be strongly supported, in my opinion, but that is the subject for another paper.

232. I use the following abbreviations: 1 = first person marker, 2 = second person marker, 3 = third person marker; ABS = absolutive marker/case, ANP = transitive subject noun phrase, AP = antipassive, CMP = completive, DMNS = independent demonstrative or pronoun, ENCL = enclitic, ERG = ergative marker/case, IVZR = intransitivizer, NOM = nominal suffix, ONP = transitive object noun phrase, p = plural, PART = participle, PASS = passive, PREP = preposition, PROCL = proclitic, s = singular, TRVZR = transitivizer. I use square brackets [] to set off infixes in interlineal glosses, angled brackets < > to set off a linguistic form cited from a manuscript using conventional orthography, and parentheses () to set off omissible or phonologically conditioned segments. I use *ch* for IPA *ɬ*, *j* for IPA *x*, *x* for IPA *ʃ*, *b'* for IPA *β*, and *'* for IPA *ʔ*. IPA *ts* is conventionally spelled by most Mayanists as *tz*, and so I use *tz*. I use the proto-Ch'olan forms by Kaufman and Norman (1984) for the transliteration of glyphs, but I do not by this assume CLM texts were written in proto-Ch'olan. Subindices *j* and *i* are used to mark relationships of co-referentiality among arguments.

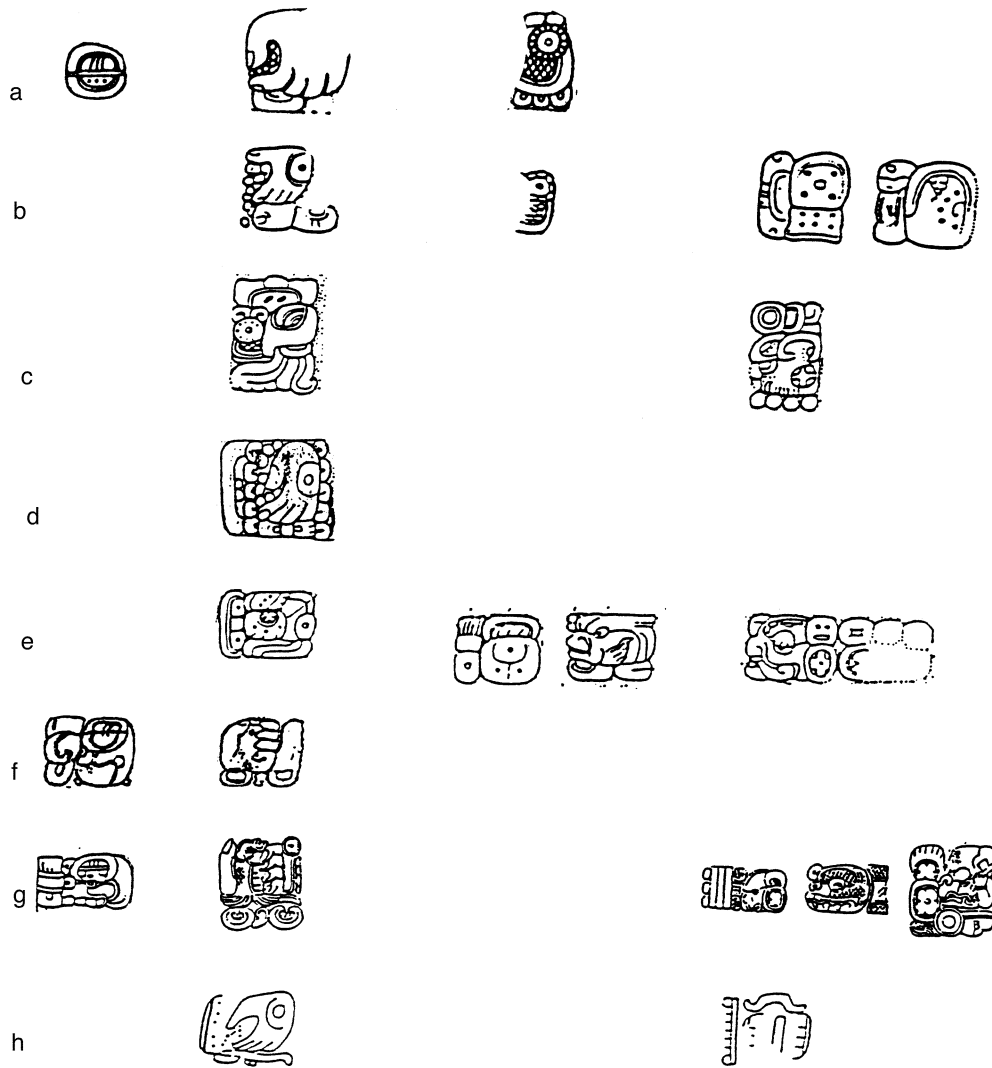


Figure 13.2. Typology of antipassive constructions in Classic texts. Incorporative antipassive clauses: (a)–(b). Absolutive antipassive clauses: (c)–(e). Agentive antipassive clauses: (f)–(g). Antipassive nominalization: (h). (a) Tikal Stela 22: **YUWAL CHOK-wa-ch'a-ji** for *yuwal chok-(o)w-Ø-Ø(+a)=ch'aj* (CONJ throw.down-AP-CMP-3sABS(+ENCL)=incense.drops 'and then he incense-threw'. Drawing in Jones and Satterthwaite (1982). (b) Aguacateca Stela 2: **CHOK-wa-ch'a-CH'AJ CHAK-b'i-? a-ku** for *chok-(o)w-Ø-Ø(+a)=ch'aj chak-? ahk* (throw.down-AP-CMP-3sABS(+ENCL)=incense.drops great/red-? turtle) 'Great-? Turtle incense-threw'. Drawing by Stephen Houston. (c) Caracol Stela 3: **YAX-ch'a-T712-wi SAK-K'AN-WITZ** for *yāx+T712-w-i-Ø sak-k'an-witz* for (first+T712-APASS-CMP-3sABS white-precious-mountain) 'White Precious Mountain T712ed for the first time'. Drawing by Carl Beetz. (d) Copan Altar 157: **u-CHOK-no-ma** for *u-chok-n-om(+a)* (3sERG-throw.down-APASS-POT) 's/he would throw.down'. Drawing from Schele and Grube (1988: fig. 1). (e) Piedras Negras Lintel 3: Oblique patient: **u-UK'-ni ti-ka-la-ka²-wa PAWATUN K'IN-AJAW** for *uk'-n-i-Ø ti+kal-a(l)=kākāw Pawahtun K'in Ajaw* (drink-APASS-CMP-3sABS PREP+shake-PARTC=chocolate Pawahtun K'in 7ajaw) 'Pawahtun K'in ajaw(Agent) drank off/from the alcoholic chocolate(Patient)'. Drawing by John Montgomery. (f) Site Q Panel: **ha-i TZAK-wi-ya** for *ha-Ø-i tzak-(a)w-iy-Ø(+a)* (PRO-3sABS+ENCL conjure-APASS-CMP-3sABS(+ENCL)) 'He (is the one who) conjured (it)'. Drawing by Peter Mathews. (g) Copan Stela 6: **ha-i TZAK-wi-ya** [War Serpent] for *ha-Ø-i tzak-(a)w-iy-Ø(+a)* [War Serpent] (PRO-3sABS+ENCL conjure-APASS-CMP-3sABS(+ENCL) [War Serpent]) 'He (is the one who) conjured the War Serpent'. Drawing by Barbara Fash. (h) Naranjo Altar 1: **u-CHOK-wi AJ-wo-sa** for *u-chok-(o)w-i(l) aj+wos(-a)* (3sERG-throw.down-APASS-POSS PROCL+Wos(a)) 'the throwing of Mr.Wos(a)' (i.e., the throwing that he performed). Drawing from Graham (1978: 104).

TABLE 13.1. Numbers of Clauses with Zero, One, and Two Lexical Arguments
According to Clause Type

Cross Group Text (n = 102).				
#	Transitive	Intransitive	Equational	Totals
0	2	26	7	=35
1	4	59	1	=64
2	3	0	0	=3
	9	85	8	=102

Palace Tablet Text (n = 45).				
#	Transitive	Intransitive	Equational	Totals
0	0	13	3	=16
1	2	21	3	=26
2	3	0	0	=3
	5	34	6	=45

Tablet of Slaves Text (n = 15).				
#	Transitive	Intransitive	Equational	Totals
0	0	0	3	=3
1	0	11	1	=12
2	0	0	0	=0
	0	11	4	=15

foreground. Mayan languages are aspect, not tense languages. Event-line events are generally in the completive aspect and take the status marker *-i(y/h)* if the verb is root intransitive or *-V_i(w)* (i.e., *V* is synharmonic with a vowel of the verb root; *w* is omissible) if root transitive (Bricker 1986; Josserand 1991; Justeson and Campbell 1997; Wald 1994b), while background events are either in noncompletive aspect or in the perfective. Back-referencing and scene-setting backgrounds are both generally marked with an enclitic spelled with T126 *ya* or with T136:126 *ji-ya*, which Wald (2000c) analyzes as **(i)jiy* ‘since/after’, and which Fox and Justeson (1984) have proposed to consist of proto-Ch’olan **ij* ‘days forward’ and **iy* ‘days backward’ contracted into **(i)jiy* (cf. proto-Tzeltalan **(e)je*, according to Kaufman [1972]). Background events lead to event-line events, which are often marked by the presence of T679 (’)*i* or YUWAL ‘and.then/when’ (Justeson 1993, personal communication, 1997). The general structure of discourse follows the pattern ‘It had been X years since he HAD.VERBED/ HAD.BEEN.VERBED (background), and.then/when he VERBED/WAS.VERBED (event-line).’

The Data: Palenque Dynastic Texts

The narrative texts used in this study are all from the site of Palenque in Mexico, and they have distinctly Ch’olan markers, such as the positional completive status marker *-wan(-i)* (MacLeod 1984). The texts are the Temple of the Cross Group (Tablet of the Cross, Tablet of the Foliated Cross, and Tablet of the Sun); the Palace Tablet; and the Tablet of the Slaves. These texts are well studied and are of sufficient length for an adequate study of information flow. Surviving CLM texts are generally brief, consisting of only a few

TABLE 13.2. Proportions of Clauses with Zero, One, and Two Lexical Arguments According to Clause Type

Cross Group Text (n = 102)				
#	Transitive	Intransitive	Equational	Totals
0	2.0%	25.5%	6.9%	=34.4%
1	3.9%	57.8%	1.0%	=62.7%
2	2.9%	0.0%	0.0%	=2.9%
	8.8%	83.3%	7.9%	=100.0%
Palace Tablet Text (n = 45)				
#	Transitive	Intransitive	Equational	Totals
0	0.0%	28.9%	6.7%	=35.6%
1	4.4%	46.7%	6.7%	=57.8%
2	6.7%	0.0%	0.0%	=6.7%
	11.1%	75.6%	13.4%	=100.0%
Tablet of Slaves Text (n = 15)				
#	Transitive	Intransitive	Equational	Totals
0	0.0%	0.0%	20.0%	=20.0%
1	0.0%	73.3%	6.7%	=80.0%
2	0.0%	0.0%	0.0%	=0.0%
	0.0%	73.3%	26.7%	=100.0%

clauses on average. The Cross Group, Palace Tablet, and Tablet of the Slaves texts comprise a total of 162 clauses, whether equational, transitive, or intransitive, and 223 argument mentions, whether lexical, affixal, or pronominal. These three texts are relatively short, averaging only 54 clauses per text, but their subject matter, the history of royal succession at the site of Palenque, suggests a high Information Pressure Quotient (IPQ) (Du Bois 1987b: 834).

Analysis of the texts is as follows: I focus on the quantity and role of arguments in each clause. I classify arguments according to their roles into S, O, A, OBL(ique), GEN(itive), and according to their expression as lexical (full NP), affixal (coreferenced with ergative or absolutive affixes on the verb), or pronominal (by means of an independent pronoun or demonstrative). I also classify the types of clauses, according to their transitivity, into transitive (e.g., *u-ch'am-aw*), intransitive (e.g., *hul-i*), positional (e.g., *chum-laj-i*), passive (e.g., *k'a[h]l*), and antipassive (e.g., *chok-(a)w=ch'aj*). I distinguish between verbal and nonverbal or equational clauses. And lastly, I distinguish between new and old mentions of arguments. I classify as “new” the first lexical/affixal mention of a given referent, and as “old” the subsequent references. I do not distinguish between old and accessible information statuses.

Preferred Argument Structure at Palenque

The data are presented in Tables 13.1–13.9. Tables 13.1 and 13.2 show the numbers and proportions of clauses with zero, one, and two lexical arguments in the three texts, classified according to clause type (transitive vs. intransitive vs. equational). Tables 13.3 and

TABLE 13.3. Numbers of Clauses with Zero, One, and Two Lexical Arguments According to Clause Type in Cross Group, Palace Tablet, and Tablet of the Slaves Texts (n = 162)

#	Transitive	Intransitive	Equational	Totals
0	2	39	13	=54
1	6	91	5	=102
2	6	0	0	=6
	14	130	18	162

Table 13.4. Proportions of Clauses with Zero, One, and Two Lexical Arguments Per Clause Type in Cross Group, Palace Tablet, and Tablet of the Slaves Texts (n = 162)

#	Transitive	Intransitive	Equational	Totals
0	1.2%	24.1%	8.0%	=33.3%
1	3.7%	56.2%	3.1%	=63.0%
2	3.7%	0.0%	0.0%	=3.7%
	8.6%	80.3%	11.1%	100.0%

TABLE 13.5. Number of Lexical, Affixal, and Pronominal Mentions across Grammatical Roles (n = 223)

Grammatical Roles	Mentions	Subtotals
Lexical		
S	96	
O	16	
A	8	
OBL	20	
GEN	12	
		=152
Affixal		
S	57	
O	1	
A	3	
OBL	8	
GEN	1	
		=70
Pronominal		
S	0	
O	1	
A	0	
		=1
Total		=223

Table 13.6. Number of All New and Old Mentions across Grammatical Roles in All Three Texts (n = 223; expletive S = 31)

Grammatical Roles	New	Old	Subtotals
Lexical			
S	69	27	=96
O	14	2	=16
A	3	5	=8
OBL	7	13	=20
GEN	4	8	=12
	97	55	=152
Affixal			
S	37	20	=57
O	1	0	=1
A	1	2	=3
OBL	0	8	=8
GEN	0	1	=1
	39	31	=70
Pronominal			
S	0	0	=0
O	0	1	=1
A	0	0	=0
	0	1	=1
Totals	136	87	=223

13.4 show the same data for all three texts combined. According to these data, 63.0 percent of clauses contain one lexical argument, followed by 33.3 percent with zero arguments, and 3.7 percent with two lexical arguments. This suggests a discourse constraint favoring one lexical argument per clause:

(3) One Lexical Argument Constraint

Table 13.4 shows the proportional breakup of all mentions according to clause type. Based on these data, 80.3 percent of all mentions are relegated to intransitive clauses, followed by 11.1 percent in equational clauses, and 8.6 percent in transitive clauses. Table 13.5 shows the numbers of all mentions (whether old or new) across grammatical roles, including core arguments (S, O, A) and noncore (OBL, GEN). Tables 13.6 and 13.7 show the numbers and the proportional breakup of new and old mentions across grammatical roles, including core arguments (S, O, A) and noncore argumentss (OBL, GEN). Based on these data, 68.6 percent of all mentions are in S role, 8.1 percent in O role, and 4.9 percent in A role. The frequency of mentions in OBL role, 12.6 percent, is roughly the same as the O and A roles combined. Table 13.8 shows the proportions of new and old mentions across grammatical roles in all three texts: 43 percent of all lexical mentions are in S role, 7.2 percent in O, 3.6 percent in A, 9.0 percent in OBL, and 5.4 percent in GEN. Keeping in mind that 80.3 percent of all mentions are relegated to intransitive clauses, that 68.6 percent of all mentions are in S role, and that 63.2 percent of all lexical

Table 13.7. Proportion of New and Old Mentions across Grammatical Roles in All Three Texts (n = 223 mentions; expletive S = 31).

Grammatical Roles	%/New	%/Old
Lexical		
S	50.7%	31.0%
O	10.3%	2.3%
A	2.2%	5.7%
OBL	5.1%	14.9%
GEN	2.9%	9.2%
	71.2%	63.1%
Affixal		
S	27.2%	23.0%
O	0.7%	0.0%
A	0.7%	2.3%
OBL	0.0%	9.2%
GEN	0.0%	1.1%
	28.6%	35.6%
Pronominal		
S	0.0%	0.0%
O	0.0%	1.1%
A	0.0%	0.0%
	0.0%	1.1%
Totals	100.0% (n = 136)	100.0% (n = 87)

mentions, which make up 68.2 percent of all mentions, are in S role, there appears to be a marked preference for mentions to be in S role, or conversely, for a constraint requiring that speakers/writers:

(4) Avoid Lexical A and O

Also based on these data, 77.9 percent of new mentions are introduced in S role, followed by 11 percent in O, 5.1 percent in OBL, 2.9 percent in A, and 2.9 percent in GEN. Also, 54 percent of old mentions are in S role, 24.1 percent in OBL, 10.3 percent in GEN, 8 percent in A, and 3.4 percent in O. And lastly, 50.7 percent of all new lexical mentions are in S role, 10.3 percent in O, 5.1 percent in A, 2.9 percent in GEN, and 2.2 percent in A. This leads to the following constraint:

(5) Avoid New Lexical A and O

These data suggest that there is a preference for new information to be introduced in the S and O roles (88.9 percent) among core argument roles, and for old information to be introduced in the S and A roles (62 percent) among core argument roles. There is a preference for new lexical mentions to be introduced in S and O roles (61 percent) among core argument roles, and for old lexical mentions to be introduced in the S and A roles (36.7 percent) among core roles. These results are in accordance with cross-linguistic ob-

Table 13.8. Total Proportions of N(ew) and O(ld) Mentions across Grammatical Roles in All Three Texts (n = 223)

Grammatical Roles	%N/Total	%O/Total	Subtotals
Lexical			
S	30.9%	12.1%	=43.0%
O	6.3%	0.9%	=7.2%
A	1.4%	2.2%	=3.6%
OBL	3.14%	5.86%	=9.0%
GEN	1.8%	3.6%	=5.4%
	43.54%	24.66%	=68.2%
Affixal			
S	16.6%	9.0%	=25.6%
O	0.4%	0.0%	=0.4%
A	0.4%	0.9%	=1.3%
OBL	0.0%	3.6%	=3.6%
GEN	0.0%	0.4%	=0.4%
	17.4%	13.9%	=31.3%
Pronominal			
S	0.0%	0.0%	=0.0%
O	0.0%	0.4%	=0.4%
A	0.0%	0.0%	=0.0%
	0.0%	0.4%	=0.4%
Totals	61.0% (n = 136)	39.0% (n = 87)	=100.0% (n = 223)

servations of the pragmatic status of S/O and S/A discourse pivots (Du Bois 1987a, b).

The data also suggest that the S role is given preference regardless of the information status of a mention; mentions in S role account for 68.6 percent of all mentions, 77.9 percent of all new mentions, 54 percent of all old mentions, 70.1 percent of all new lexical mentions, and 49.1 percent of all old lexical mentions. Thus, there appears to be a discourse constraint favoring the introduction of new mentions in S role, and, more specifically, of new lexical mentions in S role (cf. 4).

Lastly, regarding the quantity of new arguments per clause, Table 13.9 provides the numbers. Based on the data, new argument mentions seem to be introduced more often one at a time within a clause; 69.8 percent of intransitive clauses, 78.8 percent of equational clauses, and 75 percent of transitive clauses contain one new argument mention, for a total of 71.1 percent of clauses with one new argument mention. Only 16.7 percent of transitive clauses (n = 2) contain two new arguments. This could parallel the discourse constraint proposed for Sakapultek by Du Bois (1987b: 826), which calls for the avoidance of more than one new argument per clause:

(6) One New Argument Constraint

The CLM data point to some differences with respect to the data from Sakapultek presented by Du Bois (1987b). In the Sakapultek texts, lexical mentions overall (whether new

Table 13.9. Transitivity and Number of New Arguments per Clause

	0 New	1 New	2 New	Subtotals
Transitive	1	9	2	=12
Intransitive	39	90	-	=129
Equational	4	14	-	=18
	44	113	2	=159

Table 13.10. Number of Clause Types (Passive, Antipassive, Active, Intransitive, Positional, Inchoative)

Clause Type	TC	TFC	TS	PT	TSlaves	Subtotals
Passive	18	12	11	21	8	=70
Antipassive	0	0	1	6	0	=7
Active	4	3	1	4	0	=12
Intransitive	20	4	7	5	1	=37
Positional	1	3	4	1	0	=9
Inchoative	0	0	0	0	1	=1
	43	22	24	37	10	=136

or old) favor the S (48.1 percent) and O (45.8 percent), with A relegated to a very minor role (6.1 percent). In the CLM data presented here, lexical mentions overall (whether new or old) overwhelmingly favor the S (68.6 percent), with the O and A relegated to very minor roles (8 percent and 4.9 percent, respectively). These data allow for a preliminary formulation of the PAS in these three CLM texts, taking into account only argument roles (S, O, A):

(7)	GRAMMAR	PRAGMATICS
QUANTITY	One Lexical Argument Constraint	One New Argument Constraint
ROLE	Lexical S (Avoid Lexical O and A)	New S (Avoid New O and A)

While the PAS of CLM texts as described here is clearly in agreement with that of Sakapultek, I have phrased the ROLE parameters differently. The reason for this is that the frequency of S arguments in CLM texts is overwhelmingly higher than that of either O or A arguments. A larger data set may change this result, but for now it is the most striking pattern. Hence, I hypothesize that S was the preferred *discourse pivot* of CLM texts.

Could this preference be due to a bias in the texts sampled? This is a very real possibility, given that the texts sampled consist primarily of dynastic historical narratives and thus include mentions to the birth and death of rulers, both events that are prototypically root intransitive in expression (e.g., *sibj* ‘to be born’, *chäm* ‘to die’). For this reason, such verbs would be likely to lead to a high incidence of S roles. However, this may not be the case after all. Table 13.10 shows the number of transitive and intransitive clause types in

the three texts. I classify the clauses into root intransitive, active, passive, antipassive, positional, and inchoative. Interestingly, though the majority of clauses in the texts are intransitive (91.2 percent), only 27.2 percent are root intransitive, with passive clauses making up the majority with 51.5 percent. Therefore, it is the high incidence of passivization (51.5 percent) and other intransitivizing constructions (12.5 percent) that is largely responsible (64.0percent) for the preference for the S role in discourse.

Compliance with the PAS

Compliance with the PAS is achieved in various ways: intransitivization, O-incorporation, use of oblique nominal positions (e.g., possessor of relational nouns, oblique patient in absolutive antipassive clauses, oblique addressee in clauses with speaker/addressee participants, etc.), omission of coreferential clausal arguments (S, A, O) in pivot chains, omission of coreferential clausal noncore arguments (oblique, genitive), and repetition and parallelism. Coreferential arguments may exhibit the same role in all clauses involved, leading to pivot chains of the types S/S and A/A, or different roles, leading to pivot chains of the types S/A, S/O, S/GEN, and A/GEN. I illustrate these processes for pivot-chain types next.

Intransitivization of root transitive verbs (through passivization, mediopassivization, or antipassivization) can be used to maintain a nominal referent in the S role across clauses. If the other clause(s) is based on a root or derived intransitive, an S/S pivot chain may result. Intransitivization leads to compliance with the preference for one argument per clause and for that argument to be in S role. Figure 13.3 shows two such examples, one of which I discuss here. Figure 13.3a, b show a passage from Dos Pilas Stela 15. The first verb shown in Figure 13.3a is *k'al-w-i- Ø=tun* 'he stone-wrapped', and the second verb shown in Figure 13.3b is *ahk't-aj-Ø-Ø* 'he danced'. The subject of the clause in Figure 13.3a, *Itzamnah K'awil*, is coreferential with the implicit subject of the clause in Figure 13.3b. In both clauses the subject is in S role. In the first clause, *Itzamnah K'awil* is in an underlying A role, but because the verb is antipassive and the object (*tun*) is incorporated, the subject is in a derived S role and there is only one lexical argument in the clause. In the second clause the verb is an intransitivized action noun. Both clauses have adverbial material after the verb, *K'an-nal* in the first and an instrument prepositional phrase in the second. The following shows the analysis of this biclausal sentence:²³³

233. Other examples of S/S pivot chains are easily found in the corpus of CLM texts. One from Tikal Stela 21, where the implicit subject (S role) of the positional verb **CHUM-la-j(a)** is co-referential with the explicit subject (derived S role) of the incorporative antipassive verb **CHOK-wa-ch'a-j(i)**, is shown in Figure 13.3c, d. Another is found on Copan Stela A, where the implicit subject of the passive verb **u-ti** is co-referential with the explicit subject **TUN(-ni)** of the passive verb **tz'a-pa**. Another example also from Copan Stela A is the case of two conjoined antipassive clauses (**pa-sa-no-m(a) WAY(-ya)** and **ma-ka-no-m(a) WAY(-ya)**) with a fronted underlying A argument spelled **ha-o-b'a** for *ha'-ob'* 'they'. Another fascinating example is found on Tikal Altar 5, where four consecutive intransitive clauses exhibit a co-referential argument in S role. Two of the clauses are based on root intransitive verbs (**?B'IN-ya** and **CHAM-ya**), while the other two are based on passive verbs (**k'u-b'a-j(a)** and **mu-ka-j(a)**). All of these additional cases involve intransitivization of root transitives, whether through passivization in the case of **tz'a-pa** or through antipassivization in the cases of **CHOK-wa-ch'a-j(i)** and **pa-sa-no-m(a)** as the mechanism resulting in an S/S pivot chain.

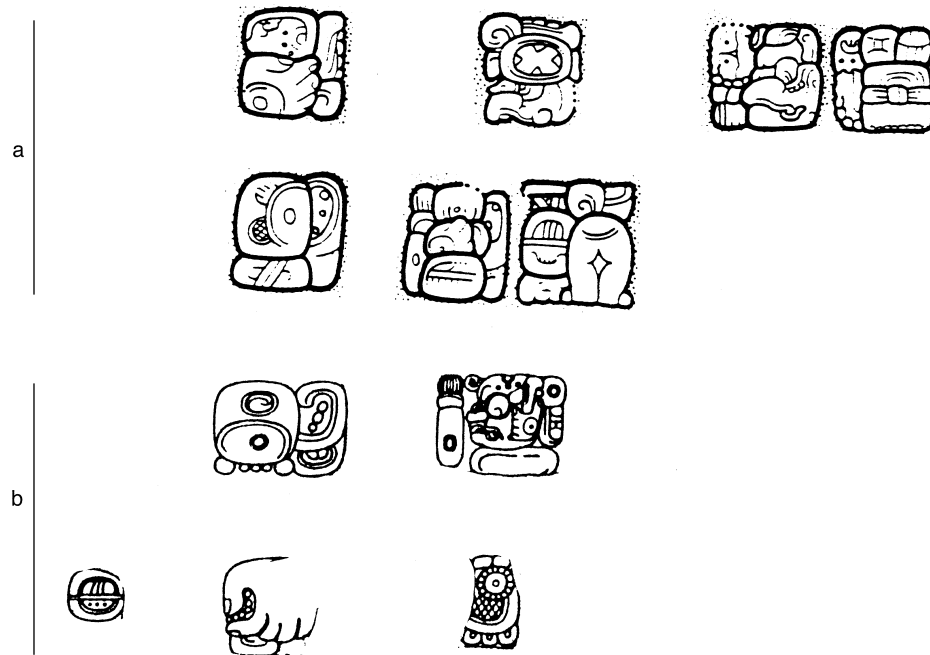


Figure 13.3. Examples of S/S pivot chains. (a) S/S pivot chain from Dos Pilas Stela 15. Drawing by Stephen Houston. (b) S/S pivot chain from Tikal Stela 22. Drawing in Jones and Satterthwaite (1982).

- (8) a. **K'AL-wi** -TUN
 k'al-w-i-Ø_i =tun
 wrap-AP-CMP-3sABS =stone
 K'AN-NAL ITZAMNAH-K'AWIL
 k'an-nal itzamnah-k'awili
 K'an-place Itzamnah k'awil
- b. **AK'-ta-ja** ti-INSTRUMENT ____
 ahk't-aj-Ø-Ø_i(+a) ti+INSTRUMENT ____ (S_i)
 dance-IVZR-CMP-3sABS PREP+instrument
 'Itzamnah K'awil(S)_i stone-wrapped at K'an'al and ____ (S)_i danced with
 [instrument.name]'

Oblique nominals, or nominal phrases that are the objects of a preposition or the possessors of the object of a prepositional phrase, can be used to introduce new nominal referents or to maintain old nominal referents in a noncore position, resulting in compliance with either the one lexical argument constraint or the one new lexical argument constraint since oblique phrases are not arguments of the verb. The following example from Palenque Tablet of the Foliated Cross: M17-O4 (Figure 13.4) illustrates the omission of an S argument in one clause based on *sih-j-aj* 'It was 4 days, 6 months, 9 years, and 2 katuns) after ____ (he_i) was born' which is coreferential with an oblique nominal in the clause that immediately follows it ('. . . when the headband was wrapped on the head of *B'aklel Wayal* [. . .]_i'). This combination leads not to an S/S pivot chain but to an S/GEN pivot chain, where GEN stands for genitive or possessor and corresponds to *B'aklel Wayal*, who is the possessor of the noun *b'a(h)* 'head':

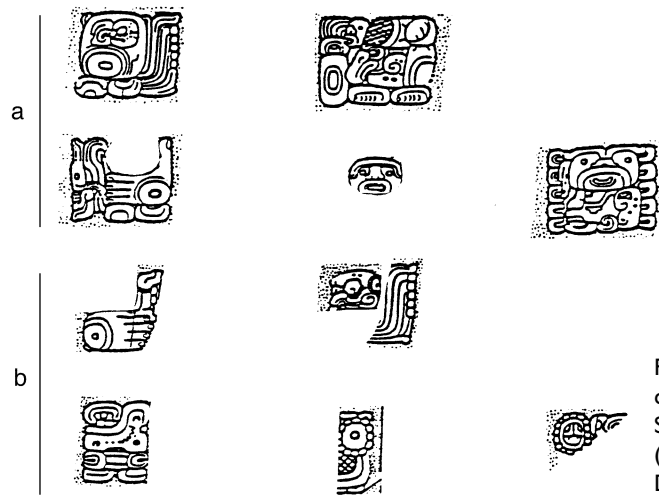


Figure 13.6. Examples of S/A pivot chains. (a) Example from Dos Pilas Stela 8. Drawing by Stephen Houston. (b) Example from Dos Pilas Stela 8. Drawing by Stephen Houston.

Passivization of the verb *k'al* 'wrap' in (9b) allows for the expression of the O as an S lexical argument and as the single lexical argument of the verb, but the topic of the text (*B'aklel Wayal*), who was already previously introduced lexically in the text at L9–M9 (not illustrated), is reintroduced as an oblique genitive mention (the possessor of the noun *b'a(h)* 'head' that is the object of a preposition).²³⁴

Omission of coreferential nominal referents allows for compliance with the one lexical argument constraint. Arguments, whether core or oblique, can be omitted under coreferentiality. The following example from the Palenque Palace Tablet at F18–H7 (Figure 13.5a) shows two active transitive clauses with a coreferential lexical argument in A role, thus forming an A/A pivot chain:²³⁵

- | | | | |
|------|--|------------------|-------------------------------|
| (10) | u-K'AL-wa | TUN(-ni) | — |
| | u _i -k'al-aw-Ø(+a) | tun | —(A _i) |
| | 3sERG-wrap-CMP-3sABS | stone | |
| | u-CHOK-wa | ch'a-j(i) | K'INICH(-ni) [. . .] |
| | ui-chok-ow-Ø(+a) | ch'aj | k'in=ich _i [. . .] |
| | 3sERG-throw-CMP-3sABS | incense | K'inich [. . .] |
| | 'K'inich [. . .] wrapped the stone and threw incense.' | | |
| | (lit. '—(He _i) wrapped the stone and K'inich [. . .] _i threw incense.') | | |

Omission of coreferential nominal referents is also realized for S/A pivot chains. Two examples from Dos Pilas Stela 8 follow. The first, seen in Figure 13.6a, consists of a positional verb (*chum-wan-i*) whose subject is omitted but coreferential with the subject

234. Another example of an S/GEN pivot chain is found on Aguacateca Stela 15. There, the possessor (GEN) of the subject of the passive verb *tz'a-pa-ja* is omitted and is coreferential with the subject of the second clause based on the incorporative antipassive verb *CHOK-wa-ch'a-j(i)*. I deal with this and other examples of S/GEN pivot chains in more detail in another paper.

235. Another example is shown in Figure 13.5b. Structurally, both examples are identical.

(*Itzamnah K'awil*) of a following transitive verb (*u-ch'am-aw*), resulting in an S/A pivot chain:²³⁶

- | | | | |
|------|--|------------------------|----------------------------------|
| (11) | CHUM-wa-ni | ti-AJAW-le-l(e) | — |
| | chum-wan-i-Ø _i | ti-ajaw-lel | —(S) _i |
| | sit-POS-CMP-3sABS | PREP-lord-ABSTR | |
| | u-CH'AM-wa | K'AWIL | ITZAMNAH-K'AWIL |
| | u _i -ch'am-aw-Ø _i (+a) | k'awil _i | itzamnah k'awil (A) _i |
| | 3sERG-grab-CMP-3sABS | k'awil | Itzamnah K'awil |
| | 'Itzamna K'awil(A) _i grabbed the k'awil and —(S) _i sat as lord.' | | |

The second example (Figure 13.6b) consists of an incorporative antipassive verb whose S is coreferential with the A of a following transitive verb:

- | | | | |
|------|--|-------------------|----------------------------------|
| (12) | K'AL-wi | -TUN(-ni) | — |
| | k'al-w-i-Ø _i | tun | —(S) _i |
| | wrap-AP-CMP-3sABS | stone | |
| | u-cho-ko-wa | ch'a-j(i) | ITZAMNAH-K'AWIL |
| | u _i -chok-ow-Ø _i (+a) | ch'a _j | itzamnah k'awil (A) _i |
| | 3sERG-throw-CMP-3sABS | incense | Itzamna K'awil |
| | 'Itzamna K'awil(A) _i threw down incense and —(he)(S) _i stone-wrapped.' | | |

Coreferential omission in S/O pivot chains also occurs in CLM texts, and may have a switch-reference function. Their existence alongside A/A and S/A pivot chains proves that the language of CLM texts did not exhibit syntactic ergativity at least in the case of inter-clausal coordination (cf. Comrie 1978; Dixon 1979, 1994; Foley and Van Valin 1984; Manning 1996). The following passage from Tikal Stela 31 (Figure 13.7) shows an interesting case:²³⁷

- | | | | |
|---------|---|--|-------------------------|
| (13) a. | i/YUWAL | DIE | ha-i |
| | i/yuwal | chäm-i/Ø-Ø _i | ha'-Ø _i (+i) |
| | and.then | die-CMP-3sABS | DMNS-3sABS |
| b. | u-TZ'AK-b'u-ji | — | SIJYAJ-CHAN |
| | ui-tz'ak-b'u(h)-Ø _i (+i) | —(O) _i Sihyaj Chan _i | |
| | 3sERG-follow-TRVZR-CMP-3sABS | | — ANP |
| | 'Then he(S) _i died, (and) [<i>Sihyaj Chan</i>](A) _i succeeded —(him)(O) _i '. | | |

236. I have reversed the order of the clauses in the English translation for clarity; while the language of CLM texts permits the omission of the coreferential argument in a pivot chain consisting of conjoined clauses to take place in any of the conjuncts, English does not. Thus, the literal translation of the clause in (11) would be 'He sat in lordship and Itzamna K'awil grabbed the God K', a translation that suggests the presence of two noncoreferential arguments 'He' and 'Ruler'. To avoid this constraint of English syntax, I have reversed the order of the clauses in the CLM example to accommodate them to a grammatical English equivalent: 'Ruler A grabbed the God K and sat in lordship'. In this way, it is clear that the omitted S argument of the intransitive clause ('—(He)(S) sat in lordship') is coreferential with the expressed A argument of the transitive clause ('Itzamna K'awil (A) grabbed the God K').

237. Two additional examples of S/O pivot chains are illustrated in Figure 13.7, but I reserve their full discussion for a future paper.

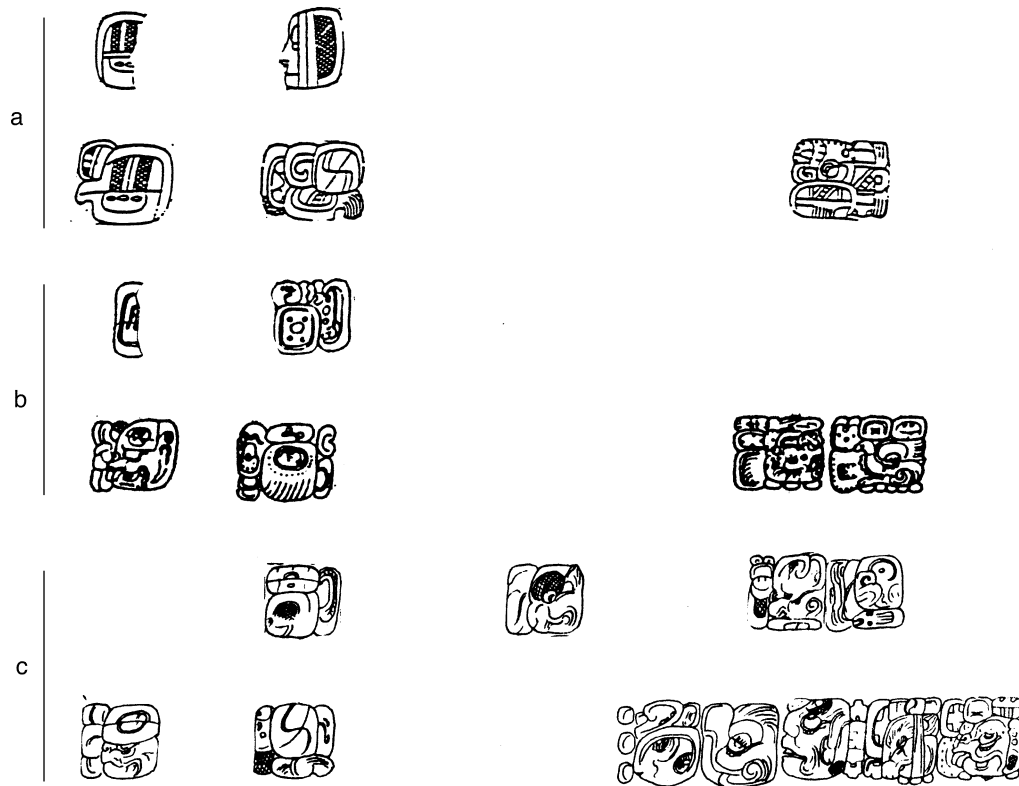


Figure 13.7. Examples of S/O (absolute) pivot chains. (a) S/O pivot chain in Tikal Stela 31. Drawing by William Coe in Jones and Satterthwaite (1982). (b) S/O pivot chain in the Palace Tablet at Palenque. After drawing by Linda Schele. (c) S/O pivot chain in the Palenque Panel at Dumbarton Oaks Collection. After drawing by Linda Schele.

This example is structurally ambiguous, but either interpretation results in an S/O pivot chain. The passages that precede it refer to *Yäx Ayin*, a ruler of Tikal, as the topic of discourse. The clauses in (13) mark a change in topic, from *Yäx Ayin*, whose death is mentioned in (13a), to *Sihiyaj Chan*, whose succession is mentioned in (13b). That much is clear. The source of ambiguity lies in whether *ha'-Ø* 'he' belongs to (13a), as the S of the intransitive verb *chäm* 'to die', or to (13b), as the O of the transitive verb *u-tz'ak-b'u-Ø+ji*. If it belongs to (13a), then the whole sentence would read 'Then he(S) died, and Sihiyaj Chan succeeded __ (him)(O)', with 'he' in the first clause a pronominal reference and 'him' in the second clause an affixal reference. This sentence shows a sequence of clauses VS_i [and] $V_ (O_i)A$. If *ha'-Ø* belongs to (13b), then the whole sentence would read 'Then __ (he)(S) died, and it was him(O) whom Sihiyaj Chan succeeded __ (him)(O)', with 'he' in the first clause and affixal reference, the first 'him' in the second clause a pronominal reference and the second 'him' in the second clause an affixal reference. This sentence shows a sequence of clauses $V_ (S_i)$ and $O_i[V_ (O_i)A]$, where O-extraction has taken place probably for emphasis of the O pronoun, which refers anaphorically to *Yäx-Ayin*. In either case the sequence of clauses can be interpreted as an S/O pivot chain. However, in the second case, under O-extraction, the S/O pivot chain would have served a stylistically appropri-

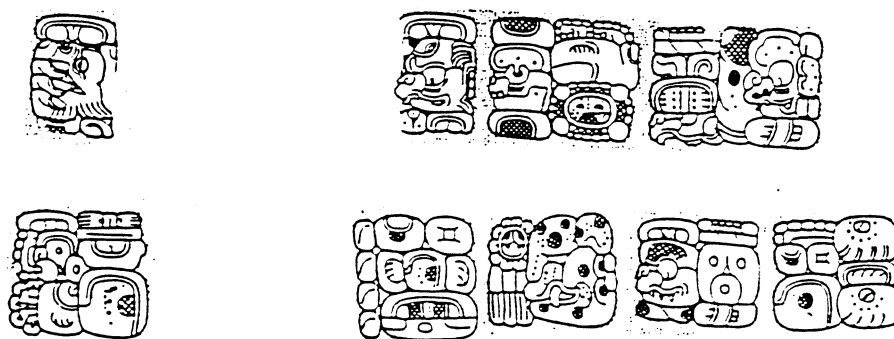




Figure 13.10. S/S pivot chain from Piedras Negras Lintel 3 involving an intransitivized action noun in one clause and an antipassivized transitive verb in another. Drawing by John Montgomery.

of the first clause is coreferential with either the A or the GEN of the second clause (*Katun Ajaw Yäx Ayin*). In either case, whether T526 is a relational noun or a verb, the point is that the contents of the two clauses could have potentially been expressed as part of a single clause (e.g., *u-tzutz-uw 18-Katun(O) Katun Ajaw Yäx Ayin(A)*). Breaking this message up into two clauses allows for compliance with the PAS as well, since now each clause has only one nominal lexical argument.²⁴⁰ There are additional examples where *u-T526-ji* is used in this manner, such as on a sentence from a Palenque Temple XVIII Jamb text at D14–D15, and on the Caracol Ballcourt Marker 3. These and other examples deserve to be discussed in detail in a future study.

Lastly, absolutive antipassive constructions in which the O is not incorporated or omitted, but instead expressed in an oblique construction can also lead to PAS compliance. The following is an example from Piedras Negras Lintel 3 (Figure 13.10)²⁴¹:

- (16) (u-)UK'-ni ti-ka-la-ka-ka-wa [RULER 4]
 uk'-n-i-Ø_i ti+kal-a(l)=kakaw [Ruler 4](S_i)
 drink-AP-CMP-3sABS PREP+shake-PARTC=chocolate ANP
 ' [Ruler 4](S_i) drank from the alcoholic chocolate(OBL)'.

Here the O is not indefinite or generic, as with incorporative antipassive constructions. Instead, the modifier *kal-a(l)* 'alcoholic' gives *käkaw* 'chocolate' definiteness or specificity. In doing so, it can no longer be incorporated. Instead, it must be expressed as the complement of a preposition, and thus as an oblique (OBL) argument. In this way, the clause complies with the One Lexical Argument Constraint, since the only lexical argument that is not oblique is the name of Ruler 4. The clause is part of a multiclausal chain including a preceding clause based on the verb *ahk't-aj-Ø-Ø* 'he danced' with the same pivot

240. There is evidence suggesting T526 may be read KAJ in this context (cf. *chu-KAJ* for *chu[h]k-aj* on Yaxchilan Structure 44 and *ch'a-KAJ* for *ch'a[h]k-aj* in the Dresden Codex), as mentioned by Schele (1994a: 18). Also, on Yaxchilan Hieroglyphic Stairway 88 one finds *u-ka-aj* possibly instead of *u-T526-ji*. If so, the clause in (15b) may be based on a verb *ka(')j* possibly cognate with Yukatek's *ká'ah* 'do', as in *b'á'ax a-ká'ah way-e* 'what are you doing here?' (Bricker et al. 1998: 121). If so, *u-KAJ-ji* may be interpreted as 's/he did it'. However, the glyph may instead represent the relational noun *kah* 'cause', attested in modern Ch'ol and Tzeltal, where it is used in constructions that express agent/causer arguments as its possessors (Aulie and Aulie 1978: 36; Slocum and Gerdel 1971: 123). If this is correct (15b) would be more similar syntactically to (14b): both would be examples of predicate nominals expressing the A that was omitted in a preceding clause. Evidence for T526 being a verb rather than a relational noun may be found on Quirigua (Schele andLooper 1996: 139), where the independent pronoun *ha-i* precedes *u-KAJ-ya-ji*, suggesting an interpretation such as 'He is the one who did it' or 'That is what he did'.

241. The analysis presented here is based on the semantic interpretation by Barbara MacLeod in Reents-Budet et al. (1994) and the syntactic interpretation in Mora-Marín (1998).

argument (Ruler 4). Thus, together they make up an S/S pivot chain ('__(He)(S_i) danced and [Ruler 4](S_i) drank from/of the alcoholic chocolate', or for clarity better translated as 'Ruler 4(S_i) danced and __(he)(S_i) drank from the alcoholic chocolate'). The antipassivization of (16) may have served a dual purpose: to provide the opportunity for an S/S pivot chain, and to comply with the One Lexical Argument Constraint by making the nongeneric O oblique.

Hypotheses and Conclusions

Because the preliminary nature of this study precludes firm conclusions, I propose the following hypotheses:

Hypothesis 1: CLM texts exhibit a PAS favoring at most one lexical argument per clause (i.e., One Lexical Argument Constraint) in S role and as new information, which constitutes the preferred *discourse pivot* role of CLM texts.

Hypothesis 2: Several strategies are used to comply with the One Lexical Argument Constraint, including parallel structures and equational sentences; the **u-T526(-hi/ji(-ya))** glyph, whether as a possessed relational noun or as a verb, is used for this purpose.

Hypothesis 3: Possessor and oblique roles may serve as important means of introducing new information in noncore lexical argument roles while still complying with the One Lexical Argument Constraint.

Hypothesis 4: Passive and antipassive constructions are responsible to a large extent for the PAS (e.g., S/S and S/O pivot chains, One Lexical Argument Constraint).

Hypothesis 5: CLM texts do not exhibit syntactic accusativity or ergativity. This is clearly seen in the coordination of multiple clauses with coreferential pivots. Agent-extraction antipassives may be triggered by pragmatic/semantic/other factors, rather than (or in addition to) syntactic ones.

Hypothesis 6: CLM texts exhibit S/S, A/A, S/A, S/O, A/GEN, and S/GEN pivot chain alignments. O/O pivot chains should be possible but infrequent due to discourse-pragmatic factors (not one example is known to me yet).

Hypothesis 7: The S/O pivot chains attested may have served a very specific function of switch-reference, or, more specifically, of switch-pivot reference. In other words, their purpose may have been to refer to an old topic (the O) while introducing a new topic (the A of the transitive clause to which the O phrase belongs).²⁴²

The set of CLM texts whose argument structure was analyzed here conforms closely to the PAS defined by Du Bois (1987a, 1987b) for Sakapultek Mayan, as well as to the PAS defined by other linguists for other Mayan languages. I suspect CLM texts in general follow the PAS of the texts described here. These texts support a privileged position of the S

242. In Mora-Marín (2000) I also argue that agent-extraction antipassives, also called agentive antipassives, may have been used to maintain the A as topical while introducing a new O into discourse. If correct, agent-extraction and patient-extraction constructions may have opposite discourse functions, since the few examples of O-extraction known to me so far are used to switch pivot reference from a continuing topic (the O) to a new lexical mention (the A). These two processes deserve more research in the future.

role in CLM historical narrative discourse; other genres attested in CLM texts are likely going to show significant differences in the proportions I described, and thus constitute an exciting topic of future research. These findings strongly support the conclusion by Josserand and Hopkins (2000) that CLM texts are very much in the same narrative discourse tradition as most modern Mayan languages.

These findings also provide expectations about the structure of entire texts that can be exploited in their decipherment and interpretation. An example of this is the proposal that O-extraction serves a key stylistic device in the discourse structure of a text. In future research I intend to compare and contrast the discourse functions of A-extraction and O-extraction, which I have suggested may be exactly the opposite of those of O-extraction (Mora-Marín 2000). This line of research is going to benefit greatly from the increasing intensity in the study of the orthographic conventions and grammatical structure of CLM texts illustrated by this volume. It is likely, for example, that differences in the discourse structure of CLM texts may be found to correlate with the isoglosses proposed by Lacadena and Wichmann (2000, 2002). For now, this paper comprises an attempt to systematize the study of discourse structure focusing on the syntactic interaction (e.g., coordination, coreferential omission of pivots, etc.) between clauses.

Acknowledgments

This research was conducted primarily during December of 2000 and January of 2001, at which point I completed a longer article on which the present paper is based. I thank Aaron Broadwell and John Du Bois for their feedback on various linguistic points, as well as Søren Wichmann for his feedback on various epigraphic points, as well as for his infinite patience.

PART IV. LANGUAGE MATERIALS

FOURTEEN

Ch'olti

An Analysis of the *Arte de la lengua Ch'olti* by Fray Francisco Morán

MAREIKE SATTLER

Independent Scholar

Introduction²⁴³

The *Arte de la lengua Ch'olti* is the only surviving documentation of Ch'olti, a Mayan language spoken until the beginning of the eighteenth century in northeastern Verapaz, Guatemala (Thompson 1938; Sapper 1906, 1936). Together with Ch'orti, Ch'olti forms the eastern branch of the Cholan languages; the western branch is formed by Acalan, Ch'ol, and Chontal. The relationship between Ch'olti and Ch'orti has been described as that of daughters of a common ancestor (Kaufman and Norman 1984) or as that of mother (Ch'olti) and daughter (Ch'orti) (Robertson 1992). In recent years, Ch'olti has entered the spotlight because of a new understanding of the language of the hieroglyphic texts attributed to the Classic Maya (Houston et al. 2000).

While it is not the purpose of this article to discuss the manuscript in length, a short history of its compilation can be presented. The term “Morán manuscript” describes two documents. The original manuscript was given to the American Philosophical Society in Philadelphia in the year 1836 by the Academia de Ciencias de Guatemala and by the governor of Guatemala, Mariano Galvez. It is still housed there today.²⁴⁴ Almost a hundred years later, William E. Gates published a handwritten copy of that same manuscript (Gates 1935). The original of this secondary copy is housed at Tulane University, New Orleans²⁴⁵ and was probably made by Karl-Hermann Berendt based on a copy by Daniel Brinton (Brinton 1869). It was later acquired by Gates (Fought 1984). Berendt and Brinton, however, did not copy the entire manuscript but left out or converged certain parts. For example, the original manuscript in Philadelphia contains two consecutive versions of

243. This article is a revised and shortened version of my master's thesis presented 1993 to the University of Hamburg, Germany.

244. American Philosophical Society Manuscript Collection 497.4/M79.

245. Howard-Tilton Latin American Library Rare Books Collection 497.2813M829.

the Ch'olti grammar; the second version is slightly modified and corrected. The Gates publication contains only one grammar, which is based on the first version of the original enriched by additions from the second grammar. Furthermore, due to its copying history, only one handwriting appears in the entire manuscript, giving the impression that this document was composed at one time by one person. However, an analysis of the original Philadelphia copy reveals various individuals with differing levels of mastery of Ch'olti working at different times in several places on the manuscript, which thus becomes a witness not only to the language but also to the last years of Ch'olti's existence. All further mentions herein of the Morán manuscript refer to the Philadelphia original.

Although Morán is commonly cited as the author, not all texts in the manuscript are by him. Francisco Morán came to the New World in 1618 and in the same year started working with Gabriel de Salazar in the Chol missions. From 1628 until 1633, the year in which the Ch'olti raided and burned the town, Morán was stationed in San Miguel Manché. He barely escaped with his life and never returned to the area (Scholes and Adams 1960; Thompson 1966). During his time in the Chol missions he most likely composed a treatise about the language he needed for his work as a missionary, possibly basing his compilation of Ch'olti on sources from the late sixteenth century (Lawrence Feldman, personal communication, 1990). In its time the work was saved and bound into a book by Alonso de Triana, who is mentioned by name in the Philadelphia manuscript (pp. 56–57). From this now lost book, the following texts were copied into what is now the Philadelphia manuscript, all of which carry a reference to the “libro grande de (. . .) fr. moran” (p. 61): “Arte en lengua Ch'olti II” (pp. 37–57), “Las Preguntas” (pp. 59–61), “Ucian Sacramento” (pp. 63–64), “Santo Rosario” (long version) (pp. 67–73), “Vocabulario” (pp. 81–181). Based on their inclusion in the manuscript, the short version of the “Santo Rosario” (p. 65) and the “Para dar el Communion” (p. 64) probably come from the same source. The vocabulary was originally set up as Ch'olti-Spanish and was reversed to Spanish-Ch'olti for the version found in the Philadelphia manuscript, which also has many entries added later by other people. Curiously, the first “Arte de la lengua Ch'olti” (pp. 5–34) does not make any reference to Morán, although it is almost identical in wording to the second version and shows a unique handwriting that is not used again in the entire manuscript.

In the year 1685 Agustín Cano led an *entrada* into the Manché region and established headquarters in San Lucas Tzalac. This new attempt to pacify the area probably was the stimulus for adding the “Confesionario” (pp. 75–80) to the collection of Ch'olti texts, which bears the same year and location in its title. A certain P Angel is mentioned as the source for an *elegante modo y regla* that is found in a paragraph immediately following the second copy of the “Arte” (p. 57). This name refers to José Angel de Zenoyo who, together with José Delgado and Diego de Santa Maria, accompanied Cano on his *entrada* (Ximenez 1973, vol. 5: 466). The “Confesionario” was copied by the same hand that had copied the majority of the other texts, with the exception of the first “Arte.” From a reference to Morán at the end of the second “Arte” (p. 57) it is clear that the copy must have been made after his death in the year 1664. Based on this information, it is conceivable that for the occasion of this 1685 *entrada* all the texts on Ch'olti that existed before were newly copied into what is known today as the Philadelphia manuscript. It was copied into a book that already contained one version of the “Arte”: the “Arte II” was copied from

the first one incorporating comments and corrections that someone had made in the margins of “Arte I.” After the completion of this copying process other people contributed entries to the vocabulary and added notes like the *elegante modo y regla* mentioned above. The first pages of the manuscript (pp. 1–3) ironically describe the last event in documented Ch’olti history, the resettlement out of San Lucas de Tzalac into the Urrán Valley at Santa Cruz el Chol (thus, the name). It was José Angel de Zenoyo, the P Angel from above, who led the 71 Chol to their new home in Belén (Houwald 1979, vol. 2: 72; Ximenez 1973, vol. 5: 283). The account covers almost three years from 1689 to 1692 and, written from a first-person perspective, describes events and dates associated with the founding of the community, like the planting of fruit and other trees, the inauguration of the altar, and deaths of members.

The very last page of the Philadelphia manuscript carries an entry that dates the document to the year 1695 and places it at Sac Balam de Dolores, a town in the Lacandon territory (Morán 1695: 182). It is unlikely that the document was copied there, as has been suggested (Vos 1988: 152), but it is possible that the manuscript was taken there during one of the three *entradas* into the Lacandon area of that year (Ximenez 1973, vol. 5: 305ff). On the margin of page 43 in the Philadelphia manuscript, a note is written documenting a Lacandon variant, suggesting that this Ch’olti manual was used and tested among the Lacandones.

The Ch’olti manuscript, mainly the Gates publication, has been harvested as a source for ethnohistoric studies, for example, Vos (1988), Stehlik (1985), Hellmuth (1971, 1972), and Thompson (1938). The main focus of attention regarding the language has been the Ch’olti vocabulary, for example, Barthel (1952), Thompson (1945), and Stross (1991). Scholars of Maya hieroglyphic writing have extracted selected features from the grammar (Bricker 1986; MacLeod 1987; Houston et al. 2000; Robertson 1998) to support an influence of Cholan languages on the language of the hieroglyphs. The earliest analysis of the entire grammatical system of Ch’olti dates back to before Gates’s publication of the Tulane version (Gates 1935). After having written an annotated copy of the Ch’olti grammar in the Tulane manuscript, LaFarge (1929) engaged in a lively letter exchange with Ernest Noyes on grammatical aspects of Ch’olti (Noyes and LaFarge 1932–1933). Although they apparently had intended to publish the results (Noyes and LaFarge 1932–1933: memorandum 27) those plans were abandoned for unknown reasons. In the year 1984 Fought (1984) and Kaufman and Norman (1984) each published a sketch of Ch’olti, Fought from a synchronic angle including comparisons to its daughter language Ch’orti, and Kaufman and Norman from a historical perspective with their reconstruction of proto-Cholan morphology. An extensive treatment of tense and aspect in Ch’olti can be found in Robertson (1992).

One of the main difficulties in working with the Morán manuscript is its inadequate orthography, which does not reflect all sounds of Ch’olti, especially neglecting the glottal stops. Although there are indications that at least one of the contributors to the manuscript did represent the glottal stop /k’/ graphically in form of the *trecillo* (ε), a symbol borrowed from the Parra alphabet used for the highland Mayan languages during colonial times (Sattler 1993: 29ff), the majority of the entries is defective. For the purpose of this article the entries have been reconstructed and converted into the orthography developed by the Academia de las Lenguas Mayas in Guatemala based on Spanish writing conventions of

the seventeenth century. All translations in Spanish are original; common paleographic shorthand features like *s.^{to}* for “santo,” *Jesuxpto* for “Jesu Christo,” *P.^o* for “Pedro” were transcribed in their full form for easier reading. I have included an English translation if a gloss in Spanish was not provided. The original Ch’olti spelling is in brackets (< >), and square brackets ([]) indicate corrections or additions that were made in the text. All page numbers following the Ch’olti entries and quotes from the manuscript refer to the page numbers in the Philadelphia manuscript. The customary abbreviation “p.” for “page” has been skipped in order to save space. The abbreviation “A” refers to the absolute pronoun, “E” to the ergative pronoun, “Der” refers to a derivational suffix, “C” stands for consonant, “V” for vowel, and ‘V_r’ for a vowel echoing the vowel of the root of the word.

Verbs

INTRANSITIVE VERBS

Intransitive verbs follow two main conjugation patterns. It is the formation of the verb stem—a root or a derived stem—that determines the conjugation pattern. The conjugation of the passives ending in *-al* does not constitute a third pattern since the ending is probably a contracted form of *-a-el* and thus follows the second pattern.

Root Intransitive Verbs

In this group fall all those verbs for which the verb stem is identical to the verb root. Kaufman and Norman (1984: 103f) divide this group into two subgroups according to the formation of the completive, one forming it in *-i*, the other in *-Vy*. There are, however, only two examples of *-i* as the completive aspect marker, *tali* (75, 78) <*tali*> and *b’ixi* (90) <*bixi*>, while the majority of the entries in the manuscript show a *-Vy* completive suffix. Since *bixi* is irregular with a different stem for each aspect (*b’ixnel* <*bixnel*> - *b’ixi* <*bixi*> - *chik* <*chic*>), *tali* is left as the only member of this second group and could be considered an exception.

Incompletive:

iual E-ROOT-*el*

iual u-wan-el kami ‘duerme nuestro Padre’ (54) <*iual uanel cami*>

Completive:

ROOT-*Vy*-A

putz’-uy ‘huyose’ (124) <*putzui*>

cham-ay-et tuut crus ‘you died on the cross’ (69) <*chamalet tuut crus*>

Subjunctive:

x-ROOT-*ik*-A

-lok’-ik ixte ne diablo tapusik’al ‘even the devil will leave your heart’ (77)

<*xloquic ixte ne diablo ta puczical*>

The following example displays the irregular subjunctive stem *chik* from *bixnel* 'go'.

ma taualen x-chik-et tintze 'I am not worthy that you dwell in me'²⁴⁶
(64) <ma taualen ~~matzen~~ xo chic[et] tintze>

Derived Intransitive Verbs

The term derived intransitive verb refers to various groups of intransitives in which the verb stem is created by an extension of the traditional CVC root. All verbs in this group are distinguished by a vowel or a diphthong before the incomplete intransitive suffix *-el*, *tap-a-el* 'apagar' (82) <tapael>, *k'ax-i-el* 'caer' (54) <caxiel>, *ya-l-aw-el* 'atormentar' (81, 83, 169), 'castigar' (95) <yalavel, yalauel>. The vowel, inherent to the verb root, is either *-i-*, *a-* or, as in the case of inchoatives, *-aw-*. The only example of an *-o-* vowel in *xot-o-el* 'badear, cortar el agua' (90) <xotoel>, may just be a mistake by the copyist or an exception. Other verbs with a root vowel *-o-*, *ojm-a-el* 'herber'²⁴⁷ (124) <ohmael>, and *lop-a-el* 'venir así aca' (48) <lopael>, do not show an *-o-* vowel. Furthermore, verb stems in this group are often formed through a variety of consonants (*-p-*, *-tz-*, *-l-*, *-n-*, *-s-*, *-t-*, *-m-* and *-x-*) that immediately follow the root, for example, *num-s-a-el* 'pasar algo de un lado a otro' (153), <numzael>, *pas-k-a-el* 'parecer lo buscado' (153) <patzcael>, and *pak-x-i-el* 'volver de alguna parte' (91) <pacxiel>. Some of these consonants serve a specific function: *-p-* and *-n-* are clearly used to form passive stems, *-l-* is used to create inchoatives, but the meaning of the remaining consonants is not always evident.

Occasionally alternative intransitive verb forms of the same base verb are listed without explanation as to the differences in meaning. In the following phrase two complete verb forms are given: the first one *pasa* (passive in *-al*, see below), the second *paska* also an intransitive verb from the same root *pas-* derived by *-k-*, probably with a mediopassive, as it is reflected in the Spanish translation.

pasa paska upejcajel Dios tiktaze umenel Padres ajSanto Domingo 'declarose abriose camino a la palabra de dios (50/51) <paza pazca upehcahel Dios tiktaze umenel Pes^{es} ahs^{to} Dom^o>

Incomplete:

iwal E-ROOT-(C)-*al-i-el*

iwal in-pak-x-i-el 'actualmente me buelbo' (54) <yual inpacxiel>

iwal u-pas-k-a-el upejcajel Dios tiktaze (50) 'actualmente nos manifiesta la palabra de Dios' <yual upascael upehcahel Dios tiktaze>

Complete:

ROOT-(C)-*al-i-A*

pax-i-en 'me bolbi' (54) <paxien>

pas-k-a upejcajel Dios (51) 'declarose abriose camino a la palabra de Dios' <pazca upehcahel Dios>

246. Literally, 'that you go with me'.

247. Misspelled for 'hervir' 'to boil'.

Subjunctive:

x-ROOT-(C)-*a/i-k*-A

x-nut'-p-a-k 'quando se junte' (35) <*xnutpac*>

x-mol-s-a-k winik tama uyotot Dios 'juntaronse los hombres en la iglesia' (51)
<*molzac vinic tama uiotot Dios*>

A subcategory of derived intransitives are the passives ending in *-al*. The main difference to the derived intransitives mentioned above is that the vowel is always *-a-*, while the incomplete suffix is shortened from *-el* to *-l*, and the subjunctive *-ik* becomes *-k*. The paradigm for these passives is as follows:

Incomplete:

iwal E-ROOT-*a-l*

iwal u-pas-a-l upejkajel Dios tikatze 'actualmente se nos manifiesta la palabra de Dios' (50) <*yual upazal upehcahel Dios ticatze*>

Complete:

ROOT-*a*-A

pas-a upejkajel Dios tikatze umenel padres ahSanto Domingo 'declarose abriose camino a la palabra de Dios entre nosotros por los padres de Santo Domingo' (50/51) <*paza upehcahel Dios ticatze umenel padres ahSanto Domingo*>

Subjunctive:

x-ROOT-*a-k*-A

x-mol-a-k winik tama uyotot Dios 'juntaronse los hombres en la iglesia'²⁴⁸ (51)
<*xmolac vinic tama iotot Dios*>

Inchoative

Inchoatives are derived from nouns and adjectives by *-l-* and the diphthong *-aw*. They are conjugated after the model for derived intransitive verbs. There is no instance of a fully conjugated inchoative in the incomplete with *iwal* to be found.

Incomplete:

(*iwal*) E-ROOT-*l-aw-el*

ya-l-aw-el 'atormentar' (53) <*yalauel*>

Complete:

ROOT-*l-aw*-A

ya-l-aw-en umenel Justisia 'fui atormentado por la Justisia' (53) <*yalauen umenel justisia*>

tza-l-aw upusik'al 'sweet was his heart' (67) <*salau upusical*>

Subjunctive:

x-ROOT-*l-aw-ik*-A

x-ya-l-aw-ik 'sera atormentado' (53) <*xyalauc*>

248. The translation does not reflect a passive.

TRANSITIVE VERBS

Transitive verbs are also divided into two groups, according to stem formation and conjugation pattern. The group of the primary transitive verbs is constituted by those verbs that end in a vowel identical to the root vowel (V_r).

b'oj-o 'barrenar' (89), 'clavar' (95) <*boho*>

juch'-u 'amasar' (84) <*huchu*>

pech-e 'apretar con las manos' (84), 'hacer tortillas' (84, 124) <*peche*>

The conjugation for primary transitive verbs is as follows:

Incompletive:

iwal E-ROOT- V_r -A

iwal in-k'an-a intamsen inwak'ach 'quiero matar mi gallina de la tierra' (47)

<*yual incana intamzen invacach*>

Completive:

E-ROOT- V_r -A

u-kol-o-on 'nos salvo' (41) <*vcoloon*>

Subjunctive:

x -E-ROOT- V_r -A

x-a-sut-u ab'a tuut Dios 'bolberse a Dios' (90) <*xatzutu aba tuut Dios*>

The group of secondary transitive verbs is constituted by those verbs in which the stem-forming vowel is not identical to the root vowel, for example, *tzen-u* 'sustentar' (163bis) <*zenu*>, and by those that have been derived from other word classes, for example, causatives *putz'-t-es* 'auyentar, aser huir' (83) <*putztez*>. Some derived transitives may show a final *-n* as part of their stem, as is explained further below.

k'al-e 'hacer' (124) <*cale*>

tzen-u 'sustentar' (163bis) <*zenu*>

atz'am-i 'salar' (163bis) <*atzami*> < *atz'am* 'sal' (163bis) <*atzam*>

buk-i-n 'cubrir con ropa' (95) <*buquin*> < *buc* 'ropa' (161) <*buc*>

ch'oj-b'e-n 'amar' (82) <*chohben*> < *cho* 'cosa preciosa, cosa de toda estimasion' (99) <*cho*>

tal-es 'traer' (168) <*talez*> < *talel* 'venir asi aca' (48) <*talel*>

Secondary transitive verbs are conjugated after the following model:

Incompletive:

iwal E-ROOT-(Der)-V-(*n*)-A

ma iwal imw-il-a 'no lo veo' (145) <*ma yual invila*>

iwal in-choj-b'-e-n Dios 'actualmente amo a Dios' (44) <*yual inchohben Dios*>

Completive:

E-ROOT-(Der)-V-(n)-A

ma inw-il-a ‘no lo vide’ (145) <*ma invila*>

Dios u-tzen-u-n-ox ‘Dios os sustento’ (40) <*Dios učenunox*>

Subjunctive:

x-E-ROOT-(Der)-V-n-A

ma x-inw-il-an ‘no lo bere’ (145) <*ma xinvilan*>

x-u-cho-b’e-n-et ‘he will love you’ (77) <*xuchobenet*>

The difference between these two conjugation patterns lies in the formation of the subjunctive and incomplete. The incomplete, completive (rare), and subjunctive stem of the secondary transitive verbs add a final *-n*, whereas the primary transitive verbs do not. This rule is applicable only where possible, that is, if there is a final vowel present in the stem before the addition of *-n*. Thus, causatives ending in *-es* are exempt from this rule, but causatives ending in *-se* show a final *-n*:

x-a-lok’-se-n-on naik ‘that he will redeem us’ (74) <*xa loccenonaic*>

The final *-n* seems to be most prominent in the subjunctive of the secondary transitive verbs:

subjunctive transitive with *-n*:

x-u-choj-b’e-n-et ‘he will love you’ (77) <*xuchobenet*>

x-in-k’al-e-n inch’ol ‘are mi milpa’ (45) <*xincalen inchol*>

ma x-inw-il-a-n ‘no lo bere’ (145) <*ma xinvilan*>

However, it also appears on completive and incomplete verb stems:

Final *-n* in completive of secondary transitive verbs:

Dios u-tzen-u-n-ox ‘Dios os sustento’ (40) <*Dios učenunox*>

Final *-n* in the incomplete of secondary transitive verbs:

iwal aw-ak’t-a-n tuyanil tuyanil atajnal ‘you let go of all your sins’ (76)

<*yual avactan tuyanil tuyanil atahnal*>

iwal in-choj-b’e-n Dios ‘actualmente amo a Dios’ (44) <*yual inchobben Dios*>

In the vocabulary, entries for secondary transitive verbs are given with and without a final *-n* as the base entry:

jib’-a-n ‘arrastrar la flema’ (87) <*hiban*> and *jib’-a* ‘arrastrar’ (84) <*hiba*>

k’at-i-n ‘pedir’ (151) <*catin*> and *k’at-i* ‘preguntar, pedir’ (151) <*cati*>

mijs-u-n ‘barrer’ (90) <*mihzun*> and *mis-u* ‘barrer’ (91) <*mizu*>

There even exist some examples of primary transitive verbs showing a final *-n*. They mainly appear as “infinitive” verbs in the vocabulary and, in some cases, as participles. While the participle is regularly formed just with the suffix *-b’il* added to the verb root, there are some examples of the suffix *-b’il* being added to a primary transitive verb stem ending in *-V_r-n*.

Primary transitive verbs with *-n*:

- kojk-o-n* 'aguardar' (86) <*cohcon*> and *kok-o* 'guardar' (119) <*coco*> and *kojk-o* 'guardar' (119) <*cohco*>
jujl-u-n 'bruñir' (91) <*juhlun*>
tijt-i-n 'limpiar, sacudir' (135) <*tihtin*>
sujs-u 'limpiar' (134) <*zuhcu*> and *sujsunte* 'limpiadientes' (134) <*zuhzunte*>

Participles of primary transitive verbs with *-V_T-n-b'il*:

- kojk-o-n-b'il k'in* 'dia de fiesta' (105), 'dia de guarda' (107), 'fiesta de guarda' (116) <*conconbil quin*>
tum-u-n-b'il konajel tuyanil atajnal 'traes pensados todos tus pecados' (76) <*tumunbil conahel tuyanil atanal*>
il-i-n-b'il 'hated' (56) <*ilinvil*>

Kaufman and Norman (1984: 98) explain that, at the time of the composition of the manuscript, Ch'olti had been in a state of transition leveling the conjugation paradigm of the secondary transitive verbs, with its distinction between incomplete (*-n*) and complete (no *-n*), in favor of the unmarked verb form (no *-n*), similar to the paradigm of the primary transitive verbs, which had no distinction between incomplete and complete aspects either. Given, however, that the final *-n* also appears on primary transitive verbs and not only in the context of a complete/incomplete opposition, this explanation may not be sufficient. Also there seems to be a correlation between the insertion of a preconsonantal *-j-* into the verb root and the appearance of a final *-n*. The primary transitive verbs that show a final *-n* (see examples above) are all attested with a *-j-* infix.

- ajkan* 'bramar' (91) <*ahcan*>
jujlun 'bruñir' (91) <*juhlun*>
yojkon 'pisar' (154) <*yohcon*>
kojkon 'aguardar' (86) <*cohcon*>

Secondary transitive verbs that show a final *-n* may also show an infixed *-j-*, with some verbs appearing in both variants.

- xijb'an* 'peinar' (156) <*xihban*> and *xib'a* 'peinar' (155) <*xiba*>
mijsun 'barrer' (90) <*mihzun*> and *misu* 'barrer' (91) <*mizu*>
sijman 'sonarse las narices' (166) <*zihman*> and *siman* 'sonarse las narices' (166) <*ziman*>
obj'an 'arrancar' (95) <*o[h]ban*> and *ob'an* 'esgarrar' (113) <*oban*>
k'ajtin 'pedir' (151) <*cahtin*> and *k'atin* 'pedir' (151) <*catin*>

The infixed *-j-* generally does not seem to appear in verbs of the form CVC-(C)-V (i.e., without a final *-n*), with the exception of derived intransitive verbs in *-b'e(n)*.

- ma ka ayajb'e achobj'e ana ami* 'have you loved and cherished your mother and father?' (79) <*ma ca ayahbe achohbe ana ami*>

The nature of the data available in the manuscript may not allow for a exhaustive explanation of the question of the final *-n*. It is here suggested, however, that the final *-n* has something to do with stem formation and is not necessarily restricted to the conjugation paradigm of transitive verbs.

Transitive Verbs Ending in -b'e(n)

Verbs in this group are derived by the suffix *-b'e(n)*, which may appear with final *-n* or without. In some cases the base for derivation is an adjective. Semantically, these verbs indicate that the action of the verb has some kind of effect, often beneficial, on the object.

ch'oj-b'en 'amar' (82) <*chohben*>
noj-b'en 'ayudar' (82, 84) <*nohben*>
os-b'e 'deseo, desear' (107) <*ozbe*>
yaj-b'e 'codiciar' (98), 'deseo, desear' (107) <*yahbe*>
tak-b'e 'responder' (163) <*tache*>

Incompletive:

iwal a-tak'-b'e 'you answer' (68) <*yual atache*>

Completive:

inw-os-b'e ajli xuyak'un naik timb'a inmi inwixik 'deseo que mi padre me de muger'
 (47) <*ynvozbe ahli uiacun naic timba inmi inwixic*>
ma ka a-choj-b'e a-yaj-b'-e ana ami 'have you not loved and honored your mother
 and father?' (79) <*ma ca achohbe ayahbe ana ami*>

Subjunctive:

x-u-choj-b'e-n-et 'he will love you' (77) <*xuchobenet*>
x-a-taj-b'e-n 'you will answer' (78) <*xatahben*>

Transitive Verbs Ending in -i(n)

The suffix *-i(n)* derives transitive verbs from nouns.

b'uk-in 'cubrir con ropa' (95) <*buquin*> < *b'uk* 'ropa' (161) <*buc*>
atz'am-i 'salar' (163bis) <*atzami*> < *atz'am* 'sal' (163bis) <*atzam*>
etok-i 'acompañar' (83) <*etoqui*> < *etok* 'amigo' (83), 'compañero' (83, 96) <*etoc*>

In one example the Spanish noun 'crus' is transformed by this suffix into a Ch'olti transitive verb:

nup'u ak'ab' crus-in awut 'junta tus manos, persinate' (75) <*nupu acab crusin awut*>

Transitive Verbs Ending in -t-es, -l-es, -se(n), -es

Causatives can be derived from verbs, adjectives, nouns, and positionals and follow the conjugation pattern for derived transitive verbs. Causatives from derived intransitives keep the stem-forming consonant as in *kux-p-es* 'dar vida' (105), 'resucitar' (162) <*cux-pes*> < *kux-p-a-el* 'resucitar' (161, 167) <*cuxpael*>. Adjectives, nouns, and positionals bind the suffix *-tes* or *-les* to form the causative, while verbs take *-es* or *-se(n)*.

From adjectives:

lob'-t-es 'afear' (84) <lobtez> <lob' 'malo' (115), 'feo' (115, 137) <lob>
tzem-l-es 'enflaqueser a otro' (113) <çemlez> <tzem 'flaco' (115) <çem>

From nouns:

mi-l-es 'hacer oficio de padre' (123) <milez> <mi 'padre' (153) <mi>
b'utz'-t-es 'aumar' (83) <butztez> <b'utz' 'humo' (123) <butz>

From positionals:

k'oy-l-es 'acostar a otro' (85) <coilez> <k'oytal 'acostar a otro' (85) <coital>

From verbs:

em-se 'bajar alguna cosa' (90) <emçe> <emel 'bajar' (89) <emel>
tal-es 'traer' (168) <talez> <talel 'venir así aca' (48) <talel>
kux-p-es 'dar vida' (105), 'resucitar' (162), <cuxpes> <kuxpael 'resucitar' (161, 167) <cuxpael>

The following phrases show causatives in syntactic context; incompletives are not present.

Completive:

ma ka a-kan-t-es ab'a 'have you taught yourself?' (79) <ma ca acantes aba>
lopa u-tzatz-l-es upusik'alob 'he came to strengthen their hearts' (70)
 <lopa utzatzlez upuczicalob>
Dios u-winki-l-es jun yeb'al chan 'Dios crio el mundo' (45)
 <Dios uvinquilez hun yebal chan>

Subjunctive:

Dios x-u-chakux-p-es tuyanil chamenob 'God will resurrect all the dead' (40)
 <Dios xachacuxpez tuyanil chamneob>
tenel tipat x-i-kan-t-es ich'okil 'es obligacion buestra i a vuestro cargo esta enseñar a vuestros hijos' (41) <tenel tipat xicantez ichoquil>
ma x-u-winki-l-es ti chan lum xa 'no criara Dios el sielo i la tierra' (45)
 <ma xuvinquilez ti chan lum xa>

Transitive Verbs Ending in -b'u(n), -b'i(n), -choki(n)

Transitive verbs with the suffixes *-b'u(n)*, *-b'i(n)*, or *-choki(n)* are derived from positionals. The distribution of *-b'i(n)/-b'u(n)* seems to be determined by vowel disharmony: The suffix *-b'i(n)* follows a root vowel *-o-* or *-u-*, the suffix *-b'u(n)* follows *-i-* and *-e-*, while the root vowel *-a-* can take either one. Some verb roots are attested with both *-b'V-(n)* and *-chokin* suffixes with no noticeable difference in the Spanish glosses.

wa-b'un 'parar' (88), 'levantar' (134, 133), 'presentar' (154), 'señalar mensaje' (164)
 <vabun, babun>²⁴⁹
wa-chokin 'acompañar' (88) <vachoquin>
awa-b'in 'asentarse alguna cosa' (87) <aguabin>

249. <babun> is attested for *vabun* 'levantar' on p. 133.

ch'uy-b'in 'colgar' (96) <*chuibin*>

ch'uy-chokin 'cuelgalo' (94) <*chuichoquin*>

suk-b'in 'sosegar el corazon' (81), 'apacigar, sosegar' (87) <*zucbin*>

suk-chokin 'consolar en la aflicion' (99) <*zuchoquin*>, 'sosegar a otro' (164)
<*zucchoquin*>

Transitive Verbs Ending in -lu

The suffix *-lu* derives transitive verbs from positional roots. Although none of these verbs are documented in a syntactical setting and although the translations point to an intransitive verb, this type of verb is classified as transitive because of its outward appearance, ending in *-V*.

ch'uk-lu 'asirse' (86), 'reñir abrazo partido' (161) <*chuclu*>

k'uk-lu 'reñir' (161) <*cuchlu*>

suk-lu 'revolcarse' (161) <*zuclu*>

yuk-lu 'batir, como quien bate huevos' (90), 'mesclar' (140) <*yuchlu*>

Positional Verbs

Positional verbs constitute a special group of intransitive verbs. They are a root class that refers to positions or states in which someone or something may be found. As with intransitive verbs, the conjugation follows a split-ergative pattern: the agent of the incomplete is marked by the ergative, and, in the completive and subjunctive aspects, by the absolute pronouns. The incomplete stem is marked by the ending *-tal*, the completive by *-wan*, and the subjunctive by the framing *x-...-lek*.

Incomplete:

iwal E-ROOT-*tal*

iwal in-k'oy-tal 'acuestome' (54) <*yual incoital*>

iwal u-k'oy-tal Padre 'actualmente se acuesta el Padre' (54) <*yual ucoital P^e*>

Completive:

ROOT-*wan*-A

chun-wan-en 'yo estuve' (43) <*chunvanen*>

ten-wan ja 'çeso el agua' (102) <*tenvan ha*>

tzuk'-wan-et tuno uk'ab Dios *ami* 'you were sitting at the right hand of God your father' (70) <*tzucvanet tuno ucab Dios ami*>

Subjunctive:

x-ROOT-*ek*-A

x-chul-ek-en 'yo estare' (43) <*xchulecen*>

x-chul-ek Pedro *tya* 'estere ai Pedro' (43) <*xchulec P.^o tia*>

VOICE

Passive in -C-ael

The most common suffixes to form the passive are *-n-a-el* and *-p-a-el*. However, there are also entries with passive-like characteristics ending in *-m-a-el*, *-k-a-el*, *-t-a-el*, *-tz-a-el*, and *-s-a-el*. While all are intransitive verbs, their given translation or their use in the texts does not clearly indicate whether they are true passives. Fought (1984: 54, 55) assigns to each different thematic consonant a specific function, whereas Kaufman and Norman see all these endings as passives, with slightly different foci. They think of the endings using the consonants *-p-*, *-tz-*, and *-k-* as “celeritive passives,” “marking an action as sudden, unexpected or happening instantaneously” (1984: 109).

The conjugation of passives follows the pattern for derived intransitives. The agent of the action is introduced by *E-menel* ‘por’ (156).

Incomplete:

iwal E-ROOT-(DER)-C-a-el

iwal i-tzatz-b'u-n-a-el kamenel ‘sois ayudados por nosotros’ (50)

<*yual itzatzbunael kamenel*>

iwal in-choj-b'e-n-a-el amenel ‘soi amado por ti’ (50) <*yual inchobbenael amenel*>

Completive:

ROOT-(Der)-C-a-A

ub'-n-a ‘oir, pasibo’ (149) <*ubna*>

lok'se-n-a-on tama ikoman ‘fuimos sacados de la obscuridad i tinieblas’ (50)

<*loczenaon tama icoman*>

al-n-a-et ti belen ‘you were born in Bethlehem’ (68/69) <*alnaet ti belen*>

chak-p-a-et tya umenelob ‘Judios’ ‘you were beaten there by Jews’ (69)

<*cha[c]hpaet tia umenelob Judios*>

Subjunctive:

x-ROOT-(DER)-C-a-k-A

uk'ana Pe x-il-p-a-k misa kamenel ‘quiere el Padre que sea la misa vista por nosotros que veamos misa - tambien se puede desir *xilac* aunque no esta en uso’ (52) <*ucana P.^e xilpac misa kamenel*>

x-choj-b'e-n-a-k-ox umenel Dios ‘sereis amados por Dios’ (50)

<*xchobbenacox umenel Dios*>

Passive in -al

A second, but less frequent, passive is formed by the suffix *-al*. Morán attributes this passive primarily to the verbs that “end in a vowel” (49–50), that is, to root transitive verbs, going on to say, however, that those verbs may also form their passive in *-n-a-el*. The passive in *-n-a-el* (or *-p-a-el*) is in fact by far the dominating passive documented in the manuscript. Kaufman and Norman (1984: 108) indicate that the passive in *-al* also showed an infixed *-j-*, which is not attested in the manuscript.

Incompletive:

E-ROOT-*a-l*

iwal u-pasal u-pejkajel Dios tikatze ‘actualmente se nos manifiesta la palabra de Dios’ (50) <*yual upazal upehcabel Dios ticatze*>

Completive:

ROOT-*a-A*

al-a tikab’a umenel Pe ‘que nos fue dicho por el Padre’ (50) <*ala ticaba umenel P.^e*>

Subjunctive:

x-ROOT-*a-k-A*

The subjunctive of this passive is found in a passage demonstrating the two passive stems for the verb *ila* ‘see’, *x-il-ak* and *x-il-p-ak*:

uk’ana Pe x-il-p-a-k misa kamenel ‘quiere el Pe que sea la misa vista por nosotros, que veamos misa -tambien se puede desir *xilak* aunque no esta en uso’ (52)
<*ucana P.^e xilpac misa camenel*>

Middle Voice

Similar to the passives discussed above, these intransitive verb stems are formed by a consonant followed by the vowel *-a-* or *-i-* and the aspectual ending. The stem-forming consonants *-tz-*, *-k-*, *-m-*, *-t-*, *-s-*, *-p-*, *-n-* take *-a-*; if the theme vowel is *-i-* the stem-forming consonant is either *-x-* or *-s-*.

kux-p-a-el ‘vivir’ (53) <*cuxpa-el*>
chij-p-a-el ‘escarmentar’ (114) <*chihpa-el*>
hab’-s-a-el ‘desocupar’ (106) <*habza-el*>
tzak-t-a-el ‘cumplir’ (88, 95) <*tzacta-el*>
tule-m-a-el ‘gotera’ (119), ‘gota’ (120)²⁵⁰ <*tulema-el*>
tuch-k-a-el ‘aclarar’ (82) <*tuchca-el*>
tok-x-i-el ‘tropesar’ (170) <*tocxi-el*>
pak-x-i-el ‘bolber de alguna parte’ (91) <*pacxi-el*>
ka-x-i-el ‘caer’ (54) <*caxi-el*>
sak-s-i-el ‘amanecer’ (82) <*zacxi-el*>

While the suffix *-n-a-el* is primarily used to derive passives, it also appears on verbs that are, by a Spanish translation or syntax, not clearly marked as passives.

kilkil-n-a-el ‘temblar de miedo o frio’ (168) <*quilquil[na-el]*>
tz’altz’al-n-a ‘temblar de frio’²⁵¹ (170) <*tzaltzalna*>

250. Although translated as a noun in Spanish, this is a verb since it is followed by the comment “Verbo neutro” <*V.^O neu.^O*> (119) or <*neu.^O*> (120).

251. This verb is missing its ending *-el*.

Antipassive

Morán writes in his grammar that an antipassive did not really exist in Ch'olti (44/45). However, he lists the phrase *Dios kokyan tab'a* <*Dios coquian taba*>, which means 'God may protect you' (43/44), as an "absoluto," his expression for the antipassive. The primary transitive verb *koko* 'guardar' (119) <*coco*> appears with the suffix *-yan*, and the absence of a detectable pronoun marks it as an intransitive expression; the indirect object is indicated by the oblique pronoun *tab'a* <*taba*>. The same suffix appears in the instrumental noun *ub'yanib* 'oidos' (149) <*ubianib*> derived from the transitive verb *ub'i* 'oir' (149) <*ubi*>. Since these are the only instances of this suffix, it cannot be determined whether *-yan* is a productive suffix.

Causative

Causatives are derived from root intransitive verbs by the suffixes *-se* and *-es*, which are attached to the verb root. Causatives are conjugated like secondary transitive verbs; causatives in *-se* may add a *-n*.

- em-se* 'bajar alguna cosa' (90) <*emçe*> < *emel* 'bajar' (89, 90) <*emel*>
tal-es 'traer' (168) <*talez*> < *talel* 'venir así aca' (48) <*talel*>
k'ot-es 'llegar' (133), 'dar gracias' (106) <*cotes*> < *k'otel* 'llegar a un lugar' (48) <*cotel*>
num-se 'pasar also de un lado a otro' (153) <*numçe*> < *numel* 'pasar' (152) <*numel*>, also *numyel* (152) <*numiel*>

The causative form *t'ab'el* 'go up' <*tabel*> is listed as *t'ab'-se* 'subir' (164) <*tabse*>, but compare with *at'ab'-es-ya tab'a* 'the one who lifts you up' (59) <*atabezia taba*>, where the causative stem is shown as *t'ab'-es-*. The causative *lok'sen* 'sacar' (164) <*locçen*> <*lok'el* (164) <*loquel*> shows a final *-n*, which also appears in another example of the same verb *x-a-lok's-en-on naik* 'may you deliver us [from evil]' (74) <*xaloccenanaic*>.

Causatives from derived intransitive verbs are formed by *-(C)es*. The stem-forming consonant is retained.

- kux-p-es* 'dar vida' (105), 'resusitar' (162) <*cuxpes*> < *kuxpael* 'to live' (161, 162)²⁵² <*cuxpael*, *cuspael*>
k'a-p-es 'acabar' (81), 'acabarse algo' (86) <*capez*> < *k'apael* 'acabar de hacer alguna cosa' (81), 'acabarse alguna cosa' (83) <*capael*>
na-p-es [sic] 'dejar algo a otro' (106) <*napez*> < *nakpael* 'dejar algo a otro' (106), 'quedarse' (159) <*nacpael*>
k'aj-p-es 'acordarse' (81) <*ca[h]pez*> < *k'ajpael* 'acordarse' (82) <*cahpael*>

252. Although there is no translation for *kuxpael*, it can be derived from other entries like *kuxpael uk'ale* 'vive' (173) <*cuxpael ucale*>.

Causatives from adjectives, nouns, or positionals are derived by either *-l-es* or *-t-es*.

- lob'-t-es* 'afear' (84) <lobtez> <lob' 'malo' (115), 'feo' (115,137) <lob>
tzem-l-es 'enflaqueser a otro' (113) <çemlez> <tzem 'flaco' (115) <çem>
winki-l-es 'criar cosas racionales, cielos' (95) <vinquilez> <winik 'hombre,
 profamotiori marido' (123) <vinic>
b'utz'-t-es 'aumar' (83) <butztez> <b'utz' 'humo' (123) <butz>
k'oi-l-es 'acostar a otro' (85) <coilez> <k'oital 'acostar' (85) <coital>

Instrumental or Benefactive

The instrumental marks the verb in that the action is performed through something or for somebody. Morán considered the instrumental a very elegant mode of speaking (56). To mark the instrumental, the suffix *-b'el* is added to the transitive verb stem; root transitive verbs lose the final vowel. The instrument or recipient of the action precedes the verb.

- tuk'a x-in-chojb'en-b'el neb'a* 'con que tengo que amar al pobre' (56)
 <tuca xinchobbenbel neba>
pa x-a-chojb'en-b'el 'con pan le amaras' (56) <pa xachobbenbel>
inmaij iwal in-nojles-b'el Dios 'con mi don, oferta, dadiba, engrandesco a Dios' (56)
 <inmaij yual innoblezbel Dios>
tuk'a x-in-jul-b'el ne ch'ich'il 'con que tengo de flechar o matar aquel pajarito' (56)
 <tuca xinhulbel ne chichil>
jatal taka wante x-a-jul-b'el 'con la flecha i el arco le as de flechar' (56)
 <halal taca vante xahulbel>

Instrumentals from intransitive verbs are formed from the subjunctive stem by adding *-l-*, in one case *-el-*, right before the absolute pronoun. These are the three examples given by Morán:

- tuk'a x-chulek-l-et* 'en que o con que tengo de estar' (56) <tuca xchuleclet>
tuk'a x-wek-l-en xa ma tak inlak 'con que o en que tengo de comer si no tengo
 plato' (56) <tuca xveclen xa ma tac inlac>
tuk'a x-chik-el-en 'en que tengo de ir' (56) <tuca xchicelen>

VERBS OF EXISTENCE

There are two verbs of existence in Ch'olti, *chumul* and *aya(n)*. While *chumul* is inflected for person, but not aspect, *ayan* or *aya* is not marked at all.

- lajunte Santa Maria chumul-et* 'ten Hail Mary' (67) <lahunte Santa Maria chumulet>
tatem chumul-et 'you sit on your throne' (71) <tatem chumulet>

The only example for *aya(n)* is from the grammar section of the manuscript: *ayan ta ixim* 'ai mais? respuesta *ayan* l. *aya*' (43). In the margins of this passage someone added an interesting comment about a variant of this phrase that was apparently used by the Lacandones. According to this note the Lacandones use *an* instead of *ayan*, and the response is *anach*. These correspond to two forms found in modern Ch'ol also (Aulie and Aulie 1978:

29). This entry supports the theory that the manuscript was somehow involved in the pacification attempts of the Lacandones during the final years of the seventeenth century.

SERIAL VERBS

In serial verb constructions in which the second verb phrase constitutes the object of the first verb, both verbs are marked for person, but only the second verb is marked for aspect. However, in the incompletive the particle *iwal* precedes the first verb. Notice that the particles *ma* or *naik* are placed in relation to the second verb. In Morán's examples the first element is a verb of 'desire', like *k'ana* 'querer' (159) <cana>.

Incompletive:

iwal in-k'an-a in-k'ub'-u upejkajel Dios 'quiero creer la palabra de Dios' (47)

<yual incana incubu upehcabel Dios>

iwal in-k'an-a in-tam-se-n inwak'ach 'quiero matar mi Gallina de la tierra' (47)

<yual incana intamzen invacach>

Completive:

in-k'an-a inw-il-a misa 'quise ver misa' (47) <incana invila misa>

in-k'an-a ajli in-pul-u inch'ol ma uyak'taen ja 'quise quemar mi milpa enpero no me deja el agua' (47) <incana ahli inpulu inchol ma uiactaen ha>

in-k'an-a ajli ma naik in-k'al-e tajnal 'yo no quise haser pecado' (47)

<incana ahli ma naic incale tahnal>

Subjunctive:

in-k'an-a x-chik-en ti chan 'quiero ir al cielo' (47) <incana xchiquen ti chan>

in-k'an-a x-u-kol-o-en Dios naik 'quiero, quiero que Dios me salbe' (47)

<incana xucoloen Dios naic>

inw-os-b'e ajli x-uy-ak'-u-n naik timb'a inmi inwixik 'deseo que mi padre me de muger' (47) <yuvosbe ahli xuiacun naic timba inmi invixic>

According to Morán it was considered "elegant" to put the second verb into the passive (52).

in-k'an-a x-kol-p-ak-en naik 'quiero ser saluo' (52) <incana [xcol]pacen naic>

in-k'an-a ma naik x-lap-a-en 'no quiero ser asotado' (52) <incana ma naic xlapacen>

u-k'an-a Padre x-il-p-ak misa kamenel 'quiere el Padre que sea la misa vista por nosotros' (52) <ucana P.^e xilpac misa kamenel>

In serial verb constructions that express intent or purpose, both verbs are marked for person and aspect. The first verb is one of movement, like *lopael* 'venir así aca' (48) <lopael>. The example for the incompletive is missing the aspect particle *iwal*.

Incompletive:

lop-a-el in-k'al-e tuilal Padre 'viene a uer a el Padre' (48) <lopael incale tuilal P.^e>

Completive:

lop-a u-k'al-e misa kami ti kak'ab 'vino el Padre a desir misa a nuestro pueblo' (48)

<lopa ucale misa cami ti cacab>

Subjunctive:

x-chik-en x-in-k'al-e-n invotot 'ire a hacer mi casa' (48)

<*xchiquen xincalen invotot*>

x-chik-et x-a-k'al-e-n umakanil kanal 'iras a haser su troje de nuestras masorcas de mais' (48) <*xchiquet xacalen umacanil canal*>

x-chik-ox x-iw-il-a-n Padre tuyotot 'ireis aber al Padre a su casa' (48)

<*xchikox xiuilan P.^e tuuiotot*>

x-chik-ox nuples-n-a-k-ox umenel Padre 'id a ser casados por el Padre' (52)

<*xchicox nupleznacox umenel P.^e*>

STATIVE VERBS

Stative verbs are created by suffixing the absolute pronoun to a noun or adjective.

utz-en 'yo soi bueno' (42) <*utzen*>

diablo-et 'you are the devil' (70) <*diabloet*>

natz'en a-na-en a-mi-en (77) 'I am your mother and your father'

<*natzen anaen amien*>

Aspects are expressed by the addition of aspect particles:

utz-en oni 'yo fui bueno antiguamente' (42) <*utzen oni*>

utz-en ek'al 'mañana sere bueno' (42) <*utzen ecal*>

utz-ox naik 'ojala seais buenos' (43) <*utzox naic*>

Nouns

COMPOSITION OF NOUNS

Simple nouns are made up of one or two, rarely three, syllables.

b'ab 'remo' (161) <*bab*>

k'ab'a 'nombre' (145) <*caba*>

pusik'al 'corazon' (95) <*puczical*>

Simple nouns can be combined into a composite noun.

putz'b'ak 'abuja de hueso' (82) <*putz bac*> <*putz* 'abuja' (82) <*putz*> + *b'ak* 'queso' (119) <*bac*>

ak'amax 'animal como mico, amarillo en las palmas' (88) <*acamax*> <*ak'ab* 'noche' (145) <*acab*> + *max* 'mico' (138) <*max*>

tz'onk'ak 'arcabus' (86), 'escopeta' (113) <*tzoncac*> <*tz'on* 'cerbatana' (101) <*tzon*> + *k'ak* 'fuego' (115) <*cac, cahc, caac*>

Derived nouns are obtained from simple nouns, adjectives, or verbs.

From noun: *ajawil* 'señorio' (37) <*ahauil*> <*ajaw* 'señor' (37) <*ahau*>

From verb: *misib* 'escoba' (112) <*mizib*> <*misu* 'barrer' (91) <*mizu*>

From adjective: *utzil* 'bondad' (37) <*utzil*> <*utz* 'bueno' (37) <*utz*>

The plural is formed by suffixing *-ob* to the noun. Marking of the plural seems to be optional and is restricted to nouns referring to humans.

ajp'olon-ob 'mercadores' (37) <*ahpolonob*>
utzil winik-ob 'the good people' (61) <*utzil vinicoob*>
tub'a winik-ob uk'ale Dios ti chan lum 'para los hombres hizo dios el cielo y la tierra' (40) <*tuba vinicob vcale Dios ti chan lum*>

If some other part of the sentence denotes a plural semantically, the marking of the plural on the noun is not necessary. In the following phrase the verb *xmolsak* 'juntaronse' embodies the plural; *winik* 'hombre' is unmarked.

xmolsak winik tama uyotot Dios 'juntaronse los hombres en la iglesia' (51)
 <*xmolzac vinic tama uiotot Dios*>

NOUNS FOR BODY PARTS

In Mayan languages, nouns for body parts distinguish themselves from other nouns morphologically and syntactically. While the unmarked form of the noun includes a semantical relationship with the owner (of the body part), the noun is marked if an expression of relationship is not wanted. The data from the manuscript are too scanty to allow for a conclusive discussion, but it is evident that in Ch'olti the nouns for body parts also behave differently from the other nouns. In Ch'olti only nouns for body parts can take *-el* as the relational suffix, whereas the other nouns may take *-l*.

xich 'nervio' (147) <*chich*> and *xich'-el* 'vena' (91, 174) <*xichel, xichel*>, 'nervio' (147) <*chichel*>
b'ak 'hueso' (119) <*bac*> and *utz'uklib u-b'ak-el kawa* 'ijada' (127)
 <*utzuclib ubaquel cava*>

DERIVED NOUNS

Agentive Nouns

Prefixing *aj-* to a noun or verb root creates an agentive noun, which describes an agent who executes the action contained in the base word. As can be seen elsewhere, the agentive prefix is also used in combination with the suffixes for verbal nouns.

aj-tajnal 'pecador' (154) <*ahtahnal*> <*tajnal* 'culpa' (99), 'pecado' (154) <*tahnal*>
aj-p'is ak'ab 'estrella de Venus, mas cierto estrella: que dura toda la noche' (111)
 <*p'is* 'medida, peso' (139, 154) <*pitz, piz*>
aj-pay 'convivador' (99) <*ahpai*> <*paya* 'llamar' (134) <*paya*>

The prefix *aj-* is also used to express someone's place of origin.

uch'uul aj-itzaob 'los idolos de los ahitzaes' (37) <*vchuul ahitzaob*>
pasa upejkajel Dios tikatze umenel Padres aj-Santo Domingo 'declarose, abriose camino a la palabra de Dios entre nosotros por los Padres de St^O Domingo' (51)
 <*paza, pazca upehcabel Dios ticatze umenel P.^{es} ahs.^{to} Dom^O*>

Abstract Nouns

Nouns and adjectives are turned into abstract nouns by the suffix *-il*.

ajaw-il ‘señorio’ (37) <*ahauil*> < *ajaw* ‘señor’ (37) <*ahau*>
k’atun-il ‘batalla’ (90) <*catunil*> < *k’atun* ‘gera’ (119) <*catum*>
neb’a-il ‘probeza’ (153) <*nebail*> < *neb’a* ‘pobre’ (151) <*neba*>

Morán also lists *-al*, *-ol*, and *-ul* as abstraction suffixes, although he comments “que la mas usada es aquella particula -il” (37). While these suffixes are not attested for abstract nouns, they do appear as *-V_rl* as the suffix for inalienable possession. The suffix *-el* is excluded from Morán’s lists because it seems to be reserved for nouns describing body parts.

Instrumental Nouns

Instrumental nouns are derived from verbs. They describe the means or instruments that are used to execute the action of the base verb. Furthermore, they may also indicate the location of the action expressed in the base verb.

In the grammar section of the manuscript, Morán lists the suffix for root intransitive and primary transitive verb stems as *-ib’*; the examples he provides seem to be mainly *-aib’*, although there are also cases of *-V_rib’*, as can be seen in the following examples:

tz’ib’a ‘escribir’ (38) <*tziba*> > *tz’ib’a-ib’* ‘aquello con que se escribe’ (38)
 <*tzibaib*>
xama ‘andar’ (38) <*xama*> > *xama-ib’* ‘aquello con que ando’ (38) <*xamaib*>
kolo ‘librar’ (38) <*colo*> > *kolo-ib’* ‘aquello con que libro’ (38) <*coloib*>

At the end of the same paragraph Morán admits that in some cases of the suffix “the vowel is eaten” (38). Indeed, most examples given in the vocabulary do not show the extra vowel, the suffix just being *-ib’* attached directly to the verb root.

pich-ib’ ‘e’ ‘limpiadientes’ (134) <*pichibe*> < *pichi* ‘labrar’ (134), ‘sacar niguas o espinas’ (164) <*pichi*>
mis-ib’ ‘escoba’ (112) <*mizib*> < *misu* ‘barrer’ (91) <*mizu*>
tama k’al ib’ pa ‘en la tortilleria’ (114) <*tama ealib pa*> < *k’ale* ‘hacer’ (124) <*cale*>
yoch-ib’ sakopan ‘ventana’²⁵³ (174) <*viochib sacopan*>

To form instrumental nouns from derived intransitives, the suffix *-ib’* is added to the verb stem after dropping the *-el* incomplete ending.

pasmaj-ib’ chuch ‘urdir’ (174) <*pazmahib chuuch*>

It is interesting to note that there are no instrumental nouns derived from active causative verb stems. In the following examples the instrumental nouns are derived from passive stems of causative verbs:

253. Literally, ‘through which clarity enters’.

kantesnaj-ib 'el lugar donde se enseña' (111) <*cantesnahib*>
tzatzlesna-ib 'lo que sirve de fortaleza' (38) <*tzatzlesnaib*>

Positional verbs form the instrumental noun in *-lib*.

tz'uk-lib 'asiento' (82) <*tzuclic*>
chun-lib 'lugar' (133) <*chunlib*>

There are a few irregular instrumental nouns. The word for incense burner, *punlib* 'quemadero' (159) <*punlib*>, is derived from *pulu* 'quemar' (159) <*pulu*>; and *xiyab* 'peine te teger' (154) <*xiiab*> is the instrumental noun for *xib'an* 'peinar' (154) <*xiban*>. The entry *ub'yanib* 'oidos' (149) <*ubianib*> is interesting because it seems to be an instrumental noun derived from *ub'i* 'oir' (149) <*ubi*>. The suffix *-yan* appears in one other instance as a possible antipassive suffix: *Dios kokyan tab'a* 'may God guard you' (43) <*Dios coquian taba*>. The entry *ub'yanib* may possibly be an instrumental noun derived from an antipassive verb stem.

Verbal Nouns from Intransitive Verbs

The majority of verbal nouns derived from intransitive verbs show examples from the group of the root intransitive verbs. For this group the verbal noun is identical with the incomplete stem, ending in *-el*:

xaik najka awosb'e u-cham-el asakum awitz'in 'have you ever wished for the death of your siblings?' (80) <*xa[ic] na[h]ca avozbe uchamel azacum avitzin*>
u-talel ixte ne pastores u-tal-el achi uxtul ajawob 'the coming of the shepherds and the coming also of the three kings' (72) <*vtalel ixte ne pastores vtalel achi vxtul ahauob*>

Since the same set of pronominal markers (ergative) is used to indicate possession on nouns and the agent on the verb in the incomplete aspect, the distinction between verbal noun and conjugated verb is very unclear. In the following examples the verbal nouns are identified as such by a preceding preposition *ti* (first example) and by the absence of a pronominal marker (second example):

xkolpaken naik t in-cham-el 'may I be saved from death' (71)
 <*xcolpacen naic tinchamel*>
xaik najka awosb'e cham-el umenel aneb'ail 'have you ever wished for death because of your unworthiness' (80) <*xa[ic] na[h]ca avozbe chamel umenel anebail*>

Although not as well represented, verbal nouns of derived intransitives are also identical to the incomplete verb stem, ending in *-el*.

nuplesnah-el 'casamiento' (98) <*nupleznahel*>
jak'pa-el 'ahogo' (87) <*hacpael*>
ali kaji u-tumuna-el 'quando lo pensaste?'²⁵⁴ (76) <*ali cahi utumunael*>

254. Literally, 'when did the consideration of it begin'?

There is one example of a verbal noun of a derived intransitive formed similar to the verbal noun from root intransitives by adding *-el* to the root of the verb:

kal-el ‘embriagues’ (114) <*calel*> <*kalpael* (114) <*calpael*>

Verbal Nouns from Transitive Verbs

Morán mentions two ways of forming the verbal noun of transitive verbs. The more frequently appearing verbal noun is formed by the suffix *-ya*, which is added to the root of the verb:

tak’-ya ‘mandato’ (139) <*taquia*> <*tak’i* ‘mandar’ (139) <*taqui*>
inw-il-ya ‘lo que yo veo o cuido’ (39) <*invilia*> <*illa* ‘ver’ (135,173) <*illa*>

The other verbal noun is formed by the suffix *-o(j)el* also added directly to the root of the verb:

in-k’al-ojel ‘mi obra’ (39) <*incalohel*> <*k’ale* ‘hacer’ <*cale*>
inw-il-ojel ‘lo que yo veo o cuido’ (39) <*invilohel*> <*illa* ‘ver’ (39) <*illa*>
in-pat-oel, *in-pat-ojel* ‘la obra que yo e formado’ <*inpatoel*, *inpatohel*> (39)
 <*pata* ‘formar’ (39) <*pata*>

As the last example shows, the intervocalic *-j-* seems to fall off occasionally, something that is seen in the formation of passive stems as well.

The difference between the two suffixes *-ya* and *-o(j)el* is unclear. The following examples show the distribution of both forms in almost identical context:

machi aj-k’al-ojel tub’a tuyanil ilb’il ma ilb’il ‘is he not the creator of all that is, seen and unseen?’ (59) <*machi a[h]calohel tuba tuyanil ilbil ma ilbil*>
natz’et ixte aj-k’al-ya tub’a tuyanil ilb’il ma ilb’il ‘you are the creator of all that is, seen and unseen’ (65) <*natzet ixte ahcalia tuba tuyanil ilbil ma ilbil*>

As can also be seen in the above examples the verbal noun in either form may appear with a prefix *aj-* or *a-*, the interpretation of which remains difficult. Fought (1984: 49) reads these prefixes as the agentive prefixes. Most examples of verbal nouns found in the manuscript, especially those in a syntactic context, show this prefix:

aj-chojb’-ya ‘amante’ (85) <*ahchohbia*>
aj-kol-ya ‘librador’ (133) <*ahcolia*>
machi ixte aj-k’al-ya tikab’a ‘and who is our creator’ (59)
 <*machi ixte a[h]calia ticaba*>
machi ajk’al-ojel tub’a tuyanil ilbil ma ilbil ‘who is the creator of all seen and unseen’ (59) <*machi a[h]calohel tuba tuyanil ilbil ma ilbil*>
machi ujoel a-sat-ojel katajnal ‘who is the principal redeemer of our sin?’ (59)
 <*machi uholel azatohel catahnal*>

Verbal nouns derived from transitive verbs have an intransitive status. Objects of the action described in the verbal nouns are introduced by the oblique pronoun *t-E-b'a*:

ma ka ak'alojel tub'a tuyanil ilb'il ma ilb'il 'who is the creator of all that is, seen and unseen?' (59) <*machi a[h]calohel tuba tuyanil ilbil ma ilbil*>
natz'et ixte ahk'alya tub'a tuyanil ilb'il ma ilb'il 'you are also the creator of all things, seen and unseen' (67) <*natzet ixte ahcalia tuba tuyanil ilbil ma ilbil*>
a-k'al-ya tab'a a-kol-ya tab'a 'your creator and redeemer' (77) <*acalia taba acolia taba*>

In the following example, however, a direct object noun follows the verbal noun without being introduced by an oblique pronoun:

machi ujoel asatojel katajnal 'who is the principal redeemer of our sin?' (59) <*machi uholel azatohel catahnal*>

The verbal noun ending in *-ya* also seems to be used in an attributive function. In the following examples the verbal noun functions as a qualifier for the following noun:

natz'et in-chojb'-ya na Santa Maria 'you are my beloved mother, Saint Mary' (72) <*natzet inchobbia na s.ta Ma^a*>
taka a-chojb'-ya al kawajawil Jesu Christo 'with your beloved child, our Lord, Jesus Christ' (80) <??>
ak'expa ne pa ti chojb'-ya b'ak'tal kawajawil Jesu Christo ak'expa ne vino tuchob'ya ch'ich'el 'the bread turns into the beloved flesh of our Lord Jesus Christ, the wine turns into his beloved blood' (63) <*aquexpa ne pa ti chohuia bactal cavahauil Jesu xpto aquexpa ne vino tuchobbia chichel*>

Nouns Ending in *-b'a*

A rather small group of nouns that end in *-b'a* seem to be derived from transitive verb stems. The number of entries is too low to come to any conclusion about productivity of this suffix. The given Spanish translations vary in regard to the word class. These are all the examples found:

sat-b'a 'perdition' (151) <*zatba*> <*sata* 'perder' (151) <*zata*>
tzeles-b'a 'vmildad' (124) <*tzetzb'a*> <*tzeles* 'disminuir, achicar' (106) <*tzeles*>
nojles-b'a 'soperbia' (163bis) <*nohlezb'a*> <*nojles* 'honrar, engrandeser' (123) <*nohlez*>
k'ex-b'a 'trueque' (168) <*quexba*> <*k'ex* 'trocar' (168) <*quexe*>
kop-b'a 'engordar' (114) <*copba*>
sak-b'a 'diligente' (105) <*çacba*> and *sak'b'ail* 'diligencia' (105) <*çacbail*>
xak-b'a 'engordar' (114) <*xacba*> <*xaca* 'sustentar gente' (165) <*xaca*>

NATURAL GENDER AND NOUN CLASSIFICATION

In people and animals, female gender may be marked by the prefix *-ix*, male gender is generally unmarked:

nial ‘yerno’ (127), ‘suegra, suegro’ (163bis) <*nial*> and *ix-nial* ‘suegra’ (163bis) <*ixnial*>
kalel ‘embriagues’ (114) <*calel*> and *ix-kalel* ‘vieja’ (173) <*yxcalel*>

The addition of the word *ixik* ‘muger’ (138) <*ixic*> also accomplishes the same purpose:

chak ch’ok ‘niño muy pequeño, niñoni pequeño’ (145) <*chacchoc*> and *chak ch’ok ixik* ‘donsella’ (106) <*chacchoc ixic*>
chijk ‘venado, cieruo’ (89), ‘gamo’ (120) <*chijc*> and *ixik chijk* ‘gama, sierba’ (119) <*yxic chijc*>

Nouns describing animals may appear with the prefixes *x-* or *a(j)-*. The evidence from the manuscript shows that only animals not belonging to the group of mammals may affix these prefixes. The prefixes *ix-* and *a(j)-* do not seem to refer to sex of the animal:

a-ch’it ‘iguana’ (127) <*achit*>
a-xulun ‘tabano’ (167) <*axulun, ahxulun*>
aj-kox ‘pava’ (151) <*ahcox*>
x-chumil ‘pajaro chilchotote’ (156) <*xchumil*>
x-tajam ch’ajan ‘tela de araña’ (167) <*xtaham chahan*>
x-kapopo ‘zapo’ (163bis) <*xcapopo*>

Nouns for plants, especially trees, sometimes appear in a special composite construction, comprised of the proper noun or name of the plant and *te* ‘tree’:

b’ajlam-te ‘pataste’ (151) <*bahlamte, balante*>
jojon-te ‘granadillo’ (119) <*hohonte*>
mulak-te ‘asofaifas, una frutilla que hay aqui en Chol’²⁵⁵ (86) <*mulacte*>

The same lexeme *te* along with *tak’in* ‘cuchillo, fierro, metal’ (97) <*taquin*> and *b’ak* ‘gueso’ (119) <*bac*> also appears in composite nouns indicating the material of the object described:

chak’-te ‘barbacoa, llaman tapesco o cama’ (89) <*chacte*>
jalah’-te ‘palo de golpear la trama’ (155), ‘telar’ (158) <*halabte*>
sujsun-te ‘limpiadientes’ (134) <*zuhsunte*>
putz’-te ‘abuja de palo’ (82) <*putzte*>
putz’-b’ak ‘abuja de hueso’ (82) <*putzbac*>
putz’-tak’in ‘abuja’ (82) <*putztaquin*>

255. In the margins to this entry someone unknown wrote: *no es asifaifas*.

STRINGS OF NOUNS: POSSESSION AND ATTRIBUTES

Nouns used as an attribute add the suffix *-il*:

ixk-il ti ‘palabras de mujer’ (153) <*yxquilti*>
alas-il winik ‘jugueton’ (131) <*alazil vinic*>

The suffix *-b'il* is used on nouns referring to kinship terms to detach the nouns from their inherent relational quality. In the following examples they are used in an unpossessed manner and refer to the father, or son, as a concept, not as a specific relation of someone:

machi uk'ab'a junte - *Dios mi-b'il* ‘what is the name of the one - God Father’ (59)
 <*machi ucaba hunte* - *Dios mibil*>
Dios mi-b'il-et Dios ch'oken-b'il-et Dios espiritu santoet ‘you are God Father, God Son, and God the Holy Spirit’ (65) <*Dios mibilet Dios choquenbilet Dios espiritu santoet*>

Possession

To form a possessive the noun is prefixed by a member of the ergative pronoun set:

in-pa ‘mi pan’ (39) <*inpa*>
a-sakun a-witz'in ‘your siblings’²⁵⁶ (80) <*azacuna vitzin*>
uy-otot ‘la casa de el’ (39) <*uyotot*>

In cases of inalienable possession, the two nouns constitute more than a relation of possession; they form a specific semantic unit. To express this relationship the first noun additionally adds a *-Vl* suffix. If the root vowel of the noun is *-a-*, *-i-*, or *-u-*, the suffix mirrors the vowel (*-V_rl*).

u-ya-al Dios ‘el agua de Dios, id est baptisma’ (37) <*viaal Dios*>
t-u-k'in-il chakpejkajel ‘en el dia de juicio’ (40) <*tuquinil chacpehcachel*>
u-k'ab'-al kiwi ‘las ramas de el achiote’ (46) <*ucabal quivi*>

For nouns with *-o-* as their root vowel the suffix is *-il*:

u-ch'op-il kanuk ‘tragadero’ (169) <*vchopil canuc*>

Although Morán states that the suffix *-ol* is not represented (37), there is one example in the vocabulary:

ub'ak u-tzen-ol tun ‘riñones’ (162) <*ubac utzenol tun*>

Nouns with two or more syllables and Spanish loanwords also add *-il*:

u-jalab'te-il kak'ab' ‘la distansia de el codo hasta la mano’ (135) <*uhalabteil cacab*>

256. Literally, ‘your older and younger brothers’.

ma chumul u-ch'akib'-il ne te 'no ai jacha de este palo' (37)

<*ma chumul uchaquibil nete*>

u-grasia-il espiritu santo 'the mercy of the Holy Spirit' (77)

<*vgrasia[il] espiritu s.^{to}*>

Pronouns

There are two sets of pronouns in Ch'olti, absolute and ergative pronouns.

Absolute Pronouns

The absolute pronoun is abbreviated as A.

Singular	Plural
1. <i>-en</i>	<i>-on</i>
2. <i>-et</i>	<i>-ox</i>
3. <i>-Ø</i>	<i>-ob'</i>

Absolute pronouns are always suffixed. The third-person singular is expressed by a zero morpheme. In the grammar section of the manuscript, Morán lists the particle *ne* as the third-person singular for the absolute pronoun. This is, however, a definite article and never appears bound to a verb. Absolute pronouns are used to indicate the direct object of transitive verbs:

Dios u-winkiles-en 'Dios me crio' (40) <*Dios vvinquilezen*>

Dios u-kolo-et 'Dios te salvo' (40) <*Dios ucoloet*>

While modern Ch'orti shows a variety of glides and contractions of vowels, there is very little evidence for this in Ch'olti. This is probably partly due to the fact that the majority of the texts in the manuscript are written in the third person, a zero morpheme. One example of a possible glide is *kajiyen* 'estoy acostumbrado' (114) <*cahiien*>, where the second i-vowel of the original spelling *cahiien* may indicate a glide.

Absolute pronouns mark the subject or agent in statives and intransitive verbs, with the exception of the incomplete aspect, where the agent is expressed by an ergative pronoun:

b'ixi-ox tama uytot Dios 'you all went inside the temple' (67)

<*vixiox tama uiotot Dios*>

ma naik xchik-et ti xib'alb'a 'no iras al infierno' (46) <*ma naik xchiquet ti xibalba*>

natz'-on ajtajnalon 'we are sinners' (65) <*natzon ahtahnalon*>

The absolute pronoun can also be combined with *machi* 'quien' (159) <*machi*>:

machi-et 'quien eres tu?' (41) <*machiet*>

Ergative Pronouns

Ergative pronouns are prefixed to the verb. The third-person plural additionally takes the suffix *-ob'*. The glides in parenthesis come into use when the verb stem starts with a vowel. Ergative pronouns are abbreviated as E.

Singulary	Plural
1. <i>in(w)-/w-</i>	<i>ka(w)-</i>
2. <i>a(w)-</i>	<i>i(w)-</i>
3. <i>u(y)-</i>	<i>u(y)- . . . -ob'</i>

There is one example of *w-* for the first person singular.

tupat w-anima 'for my soul' (71) <*tupat vanima*>

Ergative pronouns mark the subject of transitive verbs:

Dios u-kolo-et 'Dios te libro, Dios te salvo' (40) <*Dios ucoloet*>

x-in-k'alen inch'ol 'are mi milpa' (45) <*xincalen inchol*>

in-k'ana ajli in-pulu inch'ol ma uy-ak'taen ja 'quise quemar mi milpa enpero no me dejo el agua' (47) <*incana ahli inpulu inchol ma uiactaen ha*>

Ergative pronouns also mark the subject of intransitive verbs in the incomplete aspect:

iwal in-b'ixnel 'actualmente me voi' (54) <*yual invixnel*>

Furthermore, the ergative pronoun expresses possession:

in-pa 'mi pan' (39) <*inpa*>

a-sakun a-witz'in 'your siblings'²⁵⁷ (80) <*azacun avitzin*>

tupat w-anima tupat ixte in-b'ak'tal 'for my soul and also for my flesh' (71)
<*tupat vanima tupat ixte inbactal*>

Reflexive pronoun

The reflexive pronoun is formed by *E-b'a* and immediately follows the (transitive) verb. The ergative pronoun is congruent with the subject of the verb:

xasutu a-b'a tuut Dios 'volvese a Dios' (90) <*xatzutu aba tuut Dios*>

ma ka akantes a-b'a tama upejkajel Dios 'Have you not taught yourself in the word of God?' (70) <*maca acantez aba tama upehcachel Dios*>

xaik najka ik'aye i-b'a ijatz'a i-b'a 'Have you quarreled among yourselves or have you beaten each other?' (79) <*xa[ic] na[h]ca icaye iba ihatza iba*>

257. Literally, 'your older and younger brothers'.

Oblique Pronoun

Oblique pronouns introduce arguments not governed directly by the verb. They often introduce the beneficiary of an action. The oblique pronoun in Ch'olti is formed by *t(i)*-E-*b'a*.

Singular	Plural
1. <i>t-in-b'a</i>	<i>ti-ka-b'a</i>
2. <i>t-a-b'a</i>	<i>t-i-b'a</i>
3. <i>t-u-b'a</i>	<i>t-u-b'a-ob'</i>

The following examples show *t-E-b'a* used as an indirect object. In combination with the question word *machi* it becomes 'to whom' or 'for whom':

- uyak'u Dios ti-ka-b'a ne pa uch'el* 'dio nos Dios a nosotros la comida i bebida' (40)
 <*vyacu Dios ticaba = ne pa uchel*>
machi t-u-b'a xinwak'un ne pa illa 'a quien dar este pan' (42)
 <*machi tuba xinvacun na pa illa*>
tuk'a xkak'alén t-u-b'a 'que le hemos de hacer' (159) <*tuca xcacalen tuba*>
inchojb'ya t-a-b'a 'mi amor para contigo' (38) <*inchobbia taba*>
ak'alya t-a-b'a akolya t-a-b'a 'your maker, your redeemer' (77)
 <*acalia taba acolia taba*>

Independent Personal Pronoun

The independent pronoun is not bound to a verb. It is formed by adding the absolute pronoun to the morpheme *natz'*. There is a separate morpheme for the third-person singular:

Singular	Plural
1. <i>natz'-en</i>	<i>natz'-on</i>
2. <i>natz'-et</i>	<i>natz'-ox</i>
3. <i>jain/jaine</i>	<i>natz'-ob'</i>

- natz'-et una Dios* 'you are the mother of God' (73) <*nazet una Dios*>
natz'-en anaen amien 'I am your mother and your father' (77) <*natzen anaen amien*>
jain umenel natz'-et kawajawil Jesuxpto 'this is, because you are our Lord Jesus Christ' (69) <*hain umenel natzet cavahauil Jesu xpto*>
jain ixte uk'ajnib' confesion 'this is the job of the confession' (76)
 <*hain ixte ucahnib confesion*>

The variant *jaine* for *jain* is a contraction of *jain* and *ne*. *Jaine* also focuses nouns that are to be followed by a subordinate clause:

- jaine b'axan uk'otel kawajawil Jesuxpto* 'this is the first coming of our Lord Jesus Christ' (72) <*haine baxan vcotel cavahauil Jesu xpto*>
jaine winik ma ukokoob' utakya Dios 'those people that do not heed God's commandments' (53) <*haine vinic ma ucocob utaquia Dios*>

The addition of the particle *achi* has an intensifying effect.

natz'en achi 'yo mismo' (41) <*natzen achi*>
hain achi kawajawil Jesuxpto ukoloon 'el mismo Jesuxpto nos salvo, nos libro' (41)
 <*hain achi cauahauil Jesu vcoloon*>

Comitative Pronoun

This pronoun is formed by *t(i)*-E-*tze* and is translated as 'with X':

t-u-tze 'con aquel' (97), 'con' (98) <*tutze*>
ma utz atum t-u-tze 'your thinking in this matter is not good' (80)
 <*ma utz atum tutze*>
chumul Dios t-a-tze 'God is with you' (73) <*chumul Dios taze*>
ma tawalen xa chiket t-in-tze 'I am not worthy that you go in with me' (64)
 <*ma tawalen taze xo [chicet] chicet tintze*>

Question Pronouns

tuk'a 'que' (159) <*tuca*>
tuk'a chumul ti chan 'what is there in heaven?' (61) <*tuca chumul ti chan*>
tu'ka uyala 'que dise' (159) <*tuca uyala*>

machi 'quien' (159) <*machi*>
machi uk'ab'a junte 'what is the one's name?' (59) <*machi ucaba hunte*>
machi chamay tuut crus 'who died on the cross?' (60) <*machi chamai tuut crus*>
machi-et 'quien eres tu?' (41) <*machiet*>

machi tub'a 'de quien' (42) <*machi tuba*>
machi tub'a xinwak'un ne pa illa 'a quien dar este pan' (42) <*machi tuba xinvacun ne pa illa*>
machi tub'a ne otot 'de quien es aquella casa' (42) <*machi tuba ne otot*>

Adjectives

Adjectives share with nouns the ability to form statives by suffixing an absolute pronoun. The difference in syntactical behavior is that adjectives cannot be prefixed by an ergative pronoun for possession. Like nouns, adjectives add the suffix *-il* when used as an attribute:

lok'-il winik 'hombre colerico' (38) <*loquil viniε*> <*lok*' 'colerico' (38) <*loε*>
to-il b'il 'camino derecho' (38) <*toil bil*> <*to* 'derecho' (105) <*to*>

In some phrases the attributive suffix is missing, possibly in expressions that have become institutionalized as one semantic unit:

no b'ay 'red grande de maiz' (161) <*no bai*>
pak'em otot 'casa vieja' (95) <*paquem otot*>
noh k'in 'dia grande' (105) <*noh quin*>

There is one instance of a possible attributive suffix *-a*. However, the etymology of the expression remains unclear:

k'an-a winik 'testigo' (167) <*εana vinic*>

To negate an expression containing an adjective, the adjective is paired with a negation particle *b'an* or *ma*. While *ma* is also employed to negate whole sentences, the two instances of *b'an* occur only with adjectives:

lo 'malo' (141) <*lo*> - *b'an lo* 'nada malo' (146) <*ban lo*>
utz 'bueno' (89) <*utz*> - *b'an utz* 'nada bueno' (146) <*ban utz*> - *ma utz* 'malo' (137)
 <*ma utz*>

Duplication of the root may have an intensifying effect:

yax yax 'muy verde' (139) <*yax yax*>
noh noh 'muy grande' (140) <*noh noh*, *no no*>
tze tze 'muy pequeño' (140) <*tze tze*>

There are, however, also examples of reduplicated roots that are not mirrored in the Spanish glosses:

k'an k'an umex 'vermejo' (90) <*cancan umex*>
chak chak uhol 'vermejo' (90) <*cha[c]chac uhol*>
ik' ik' 'negro, negra' (145) <*icic, iciquic*>

Numerals

Numerals in Ch'olti are formed by two elements: a numeric lexeme and a numeral classifier. The numeral classifier generally defines physical shape, position, manner, or some kind of measurement regarding the counted object and is placed between the number and the object.

NUMERAL CLASSIFIER

Except for one case, *tuyux k'in* 'on the third day' (61), all phrases appearing in the manuscript that include a numeric term also show a numeral classifier. I believe this instance to be a mistake since all other records of ordinal numbers show numeral classifiers.²⁵⁸ Not only cardinal numbers, but also mass words like *on* 'mucho' or question words like *hay* 'how many' carry numeral classifiers. Some numeral classifiers seem to be derived from positional and transitive verb stems.

From transitive verb stem:

junloch 'un puño' (173) <*hunloch*> and *loch'o* 'abarcas' (84), *apretar con las manos* (86) <*locho*>

258. The phrase in the Philadelphia manuscript is cut off at this point and appears in the copy by Gates as *tuyux kin*, without the classifier (Gates 1935: Confesionario 8).

From positional:

junjaw 'la mitad de la gallina o de cualquier ave' (141) <*hunhau*> and *ajawan*²⁵⁹
'bolberse boca arriba' (89) <*ahauan*>

The most generic of the numeral classifiers is *-te*:

te 'el generico de la cuenta *junte, chate, uxe* contar piedras' (96) <*hunte, chate, uxe*>
junte xa 'otra vez ' (149) <*hunte xa*>
junte sap 'una brazada' (173) <*hunte zap*>
lajunte Santa Maria chumulet (69) 'ten Ave Maria' <*lahunte santa M^a chumulet*>
jayte utujlul 'cuanto' (156) <*haite utujlul*>
jayte Dios - junte 'how many Gods? - one' (59) <*haite Dios - hunte*>

In addition there are the following numeral classifiers, in which the first part *jun-* means 'one':

junket 'parejo' (156) <*hunquet*>
junkul 'huebas etc' (96) <*huncul*>
junpal 'una bes' (173) <*hunpal*>
onpal 'muchas veces' (139) <*onpal*>
tz'it 'particula para contar como palos o candelas' (152) <*zit*>
juntul 'hombres' (96) <*huntul*>

The lexeme for 'twenty' *k'al* could also be interpreted as a classifier, indicating one unit of twenty:

chak'al 'cuarenta' (159) <*chacal*> (equals two times the unit of twenty)
ok'al 'ciento' (101) <*ocal*> (equals five times the unit of twenty)

The following examples show numeral classifiers paired with nonspecific numerals like *on* 'many' and *jay* 'how many':

onpal 'muchas veces' (139) <*onpal*>
onchok 'muchas beses' (139) <*onchoc*>
jayte utujlul 'cuanto' (156) <*haite utujlul*>
jayte Dios - junte 'How many Gods are there? - One' (59) <*haite Dios - hunte*>

CARDINAL NUMERALS

In Mayan languages numbers are formed by separate lexemes up to the number ten. The following ten numbers up to twenty are formed by addition of number plus ten. For numbers higher than twenty a system of multiples of twenty combined with additions is used. In the manuscript only a few number morphemes are found, most of them for numbers smaller than ten. In the word list they always appear together with a classifier. The following lists the number lexemes without a classifier:

259. This particular form is completive, which is not reflected in the translation.

jun ‘one’ (96) <*hun*>
cha ‘two’ (96) <*cha*>
ux ‘three’ (96) in *uxte ajawob* (68) ‘three kings’ <*uxte ahavob*>
chan ‘four’ (68) <*chan*>
oo ‘five’ in *oote* ‘five’ (101) <*o[o]te*>
uc or *wuc* ‘seven’ in *wuk ch’ahon* ‘las siete cabrillas’ (134) <*vc chahon*>
wakxik ‘eight’ in *wakxikte k’in* ‘eight days’ <*vacxikte quin*>
b’olon ‘nine’ in *bolom mak* ‘nagual de los Choles’²⁶⁰ <*bolomac*>
lajun ‘ten’ (67) in *lajun kami ti chan* ‘ten Our-Father-in-Heaven’ (67)
 <*lahun cami ti chan*>
chak’al ‘cuarenta’ (159) <*chacal*>
ok’al ‘ciento’ (101) <*ocal*>

ORDINAL NUMERALS

Ordinals are formed by prefixing the cardinal numeral with the ergative pronoun *u(y)*:-

u-chate misterio ‘the second mystery’ (69) <*vc hate misterio*>
uy-uxte misterio ‘the third mystery’ (69) <*vyuxte misterio*>

The ordinal for the number ‘five’ does not show the ergative prefix:

oote misterio ‘the fifth mystery’ (61) <*oote misterio*>

The ordinal for the number ‘one’ is represented by *b’axan*:

b’axan ‘primero’ (156) <*baxan*>
b’axan mi ‘Adan, hoc est, primer padre’ (83) <*baxan mi*>

Participles

Incompletive Participle

The incompletive participle is formed similar to the agentive noun by adding the prefix *aj-* to the verb root:

aj-xamal vinik ‘forastero’ (115) <*ahxamal vinic*> < *xamal* ‘andar’ (115, 156), ‘pasar’ (156) <*xamal*>
aj-p’is ak’ab ‘estrella de Venus, mas cierto estrella que dura toda la noche’ (111)
 <*apiz acab*> <*p’is* ‘pesar, medir’ (154) <*piz*>

Completive Participles from Intransitive Verbs

There are only a few examples of a completive participle from an intransitive verb. It is formed by the suffix *-en* or *-em* added to the verb root:

260. Etymology unclear. Although this name seems to be similar to a calendrical name, Mak refers not to a day but a month.

cham-en 'muerto' (137) <*chamen*> < *chamel* 'muerte' (137) <*chamel*>
kal-em 'embriagado' (114) <*calem*> < *kalpael* 'to drink excessively' (114) <*calpael*>
pak'-em 'podrido' (154, 173), 'viejo' (173) <*paquem*>

Completive Participle from Transitive Verbs

The completive participle from transitive verbs is formed by the suffix *-b'il* or *-V-n-b'il*:

Examples for *-b'il*:

jul-b'il 'flechado' (115) <*bulbil*> < *julu* 'flechar' (115) <*bulu*>
nuples-b'il 'casado' (98) <*nuplesbil*> < *nuples* 'juntar, es propiamente casar' (131)
 <*nuplez*>
chap-b'il pa 'tamal'²⁶¹ (168) <*chapbil pa*> < *chapa* 'coser al fuego' (95, 98) <*chapa*>

Examples for *-V-n-b'il*:

yul-i-m-b'il 'untado' (174) <*yulimbil*> < *yuli* 'ungir' (174) <*yubli*>
tz'ib'-a-n-b'il 'pintado' (155) <*tzibanbil*> < *tz'ib'a* 'escribir' (151) <*ziba*>
chobb'-e-n-b'il inmenel 'amado por mi' (55) <*chobbenbil inmenel*> < *chobb'en*
 'amar' (82) <*chobben*>
lok's-e-n-b'il 'sacado' (55) <*loczenbil*> < *lok'sen* 'sacar' (55) <*loczen*>

Kaufman and Norman (1984: 99) find this latter suffix attached only to secondary transitive verbs, those ending in a vowel different from the vowel of the verb root. There are, however, also root transitive verbs that form the participle on *-Vnb'il*:

kohk-o-n-b'il k'in 'dia de fiesta' (105), 'dia de guarda' (107, 116) <*coconbil quin*,
 <*conconbil quin*> < *kohkon* 'aguardar' (86) <*cohcon*>
il-i-n-b'il 'hated' (56) <*ilinvil*> < *ili* 'aborreser' (56) <*ili*>
tum-u-n-b'il konajel tuyanil atajnal 'traes pensados todos tus pecados' (76)
 <*tumunbil conahel tuyanil atanal*> < *tumu* 'considerar' (97) <*tumu*>

Furthermore, there is one example of a derived transitive verb forming the participle in *-b'il*, and not as expected by Kaufman and Norman in *-Vnb'il*:

il-b'il 'visto' (56) <*ilvil*> < *illa* 'ver' (135, 173) <*yilla, illa*>

The participle from a positional verb is formed by the suffix *-V_pl* added directly to the root:

but'-ul ixik 'mujer preñada' (137) <*butul ixic*>
mek'-el 'abrazado' (85, 86) <*mequel*>
k'at-al 'atrabezado' (81) <*catal*>

261. Literally, cooked or boiled tortilla.

Prepositions

Simple prepositions consist of one lexeme and are invariably used. Complex prepositions are composed from the simple preposition *ti*-E-NOUN:

Simple Prepositions

The simple prepositions in Ch'olti are *ti* 'en' (111) <*ti*>, *tama* 'en, entre' (111) <*tama*> and *taka* 'con aquel' (97), 'con' (98), 'tambien' (168) <*taca*>. Although the dictionary glosses *ti* only as a local preposition, further examples show a more diversified use of *ti*:

Local:

- ail nojk'in tya ti Jerusalen* 'to see the feast day there in Jerusalem' (68)
 <*ail nohquin tia ti Jerusalen*>
tuk'a chumul ti chan 'whatever there is in heaven' (61) <*tuca chumul ti chan*>
ti chan 'arriba' (82), 'en alto' (82, 112), 'en el cielo' (112) <*ti chan*>
k'akxiet umenel ti b'ijil 'you fell through it onto the road' (69)
 <*ca[c]xiet umenel ti bihil*>

Instrumental:

- tob'sa awok ak'ab' ti clavos tak'in* 'your feet and hand were nailed with iron nails' (70) <*tobza avoc acab ti clavos*>
kachal ti ch'ajam 'he was tied up with rope' (69) <*cachali ti chaham*>²⁶²
b'ut'ulet ti gracia 'you are filled with grace' (73) <*butulet ti gratia*>

Partitive:

- cha lajunte ti jab'* 'twenty years' (68) <*chalahunte ti hab*>
xa tuk'a ti k'ajrib' ak'ale 'whatever kind of work you do' (78)
 <*xa tuca ti cahrib acale*>

The preposition *tama* refers to position within a three-dimensional space:

- tama k'alib' pa* 'en la tortillera' (114) <*tama ealib pa*>
inub'i upejkajel Dios uyala Padre tama uyotot 'oi la palabra de Dios que dijo el Padre en la iglesia' (44) <*inubi vpehcabel Dios uyala P.^e tama uiotot*>
machi uk'ab'a chumul tama santo sacramento 'what is the name of the one situated in the holy sacrament?' (63) <*machi ucaba chumul tama s.^{to} sacramento*>
uxte k'in atzakla awal tama no ya 'three days was your child searched for, in great pain' (68) <*vxte quin azacla aval tama no ya*>
xalok'senon naik tama tuyanil axkil 'deliver us from all evil' (74) <*xaloccenonaic tama tuianil axcil*>

The preposition *taka* means 'with' or 'also':

- taka* 'con aquel' (97), 'tambien' (168), 'con' (98) <*taea, taka*>
unut'al kawanima taka Dios 'the union of our soul with God' (64)
 <*unutal cauanima taka Dios*>

262. The form <*cachali*> is unclear, probably a mistake.

A peculiar phrase including the preposition *taka* 'with' is found in the manuscript written on a page that contains a collection of phrases and notes, positioned right after the first copy of the grammar:

watal inxe amenel taka atajnal 'me povocas a vomito con tus pecados' (35)
<vatal inxe amenel taca atahnal>

Complex Prepositions

Complex prepositions consist of several elements. The main constituent is a noun referring to a body part, which is always preceded by an ergative pronoun and the preposition *ti*.

The preposition *t(i)*-E-*ut* from *ut* 'cara' (98, 149), 'ojos' (149) *<ut>* is used to refer to objects with a flat surface, horizontal or vertical, also for people's faces, and can roughly be translated as 'on, in front of, facing':

xa sutu ab'a t-u-ut Dios 'volverse a Dios' (90) *<xatzutu aba tuut Dios>*
chumul t-u-ut lum 'he is on earth' (65) *<chumul tuut lum>*
chamayet t-u-ut crus 'you died on the cross' (69) *<chamalet tuut crus>*
achokinet t-u-ut-ob' ajtajnal winik Anas, Caifas, Pilatos 'you were led in front of the sinners Hannas, Caiaphas and Pilate' (69) *<achoquinaet tuutob ahtahnala vinic Anas Caifas Pilatos>*

The preposition *t(i)*-E-*jol*, from *jol* 'cabeza' (95) *<hol>* describes the tip, or highest point of an object, and is translated as 'on top of, onto, over':

utalel spiritu santo t-u-jol-ob' aposteles 'the coming of the holy spirit over, onto the disciples' (70) *<utalel spiritu s.^{to} tuholob apostoles>*
ukotel kawajawil Jesuxpto t-u-jol witzil 'the arriving of our Lord Jesus Christ on top of the mountain' (72) *<ucotel cavahauil Jesu xpto tuhol witzil>*
uyaulu Pe t-a-jol t ak'alb'el confesar 'absolviote el Pe' (75)
<vyaulu P.^e tahol tacalbel confesar>

The preposition *t(i)*-E-*pat* is derived from *pat* 'espaldas' (95, 112) *<pat>* and is translated as 'for':

tuyanil ak'ahna t-u-pat wanima ixte inb'ak'tal 'you have done everything for my soul and flesh' (71) *<tuyanil acahna tupat wanima tupat ixte inbactal>*

Particles

The group of particles encompasses a variety of lexemes that do not inflect for person or derive in any other way:

Demonstrative Particles

The demonstrative particle *ne* precedes the focused noun:

ne 'aquel' (45), 'nombre o particula de demonstracion' (145) *<ne>*

ma chumul uch'akib'il ne te 'no ai jacha de este palo o para cortarle' (37)
 <ma chumul uchaquibil ne te>
uyak'u Dios tikab'a ne pa uch'el 'dio no Dios a nosotros la comida i bebida' (40)
 <vyacu Dios ticaba ne pa uchel>
utalel ixte ne pastores 'the coming of also the shepherds' (72)
 <utalel ixte ne pastores>
jain ila ukajel utzikal ne santo rosario 'this is the beginning of the reciting of the rosary' (65) <hain ila ucabel vtzical ne s.^{to} Rosario>

In relative clause constructions *ne* focuses the antecedent noun;

tuk'a uyala ne jun lopa tatze 'que dice la carta que te vino?' (38) <tuca uyala ne hun lopa tatze>
machi uk'ab'a ne persona lopa uchamak kab'ak'tal tunak' santa Maria 'what is that person's name who came to take on our flesh in Mary's womb?' (59) <machi ucaba ne persona lopa uchamac cabactal tunac s.^{ta} Maria>

The particle *ne* may substitute for the antecedent noun, as is shown in the following example:

ma ka ukoloom [sic] uch'ok Dios Jesuxpto ukab'a ne chamay tuut crus 'has not the son of God, Jesus Christ is the name of the one, who died on the cross, saved us?' (60) <maca ucoloom uchoc Dios Jesu xpto ucaba ne chamai tuut crus>

The particle *illa* has also a demonstrative function, but always follows the focused part, *ila* 'este, esto, aquel aquello' (111) <ila>:

ne santo sacramento illa e uchunlib' gracia 'the holy sacrament is the seat of grace' (77) <ne santo sacramento illa e vchunlib' gracia>
machi tub'a xinwak'un ne pa illa 'a quien dare este pan?' (42)
 <machi tuba xinvacun ne pa illa>
jain illa ukajel utzikal ne Santo Rosario 'this is the beginning of the reciting of the rosary' (65) <hain ila ucabel vtzical ne s.^{to} Rosario>

The demonstrative particle *e* is used in one phrase:

e 'aquel' (83) 'es particula demonstrativa' (113) <e>
ne santo sacramento illa e uchunlib' gracia 'it is the holy sacrament that is the seat of grace' (77) <ne santo sacramento illa e vchunlib' gracia>

Local Particles

The particle *tya* refers to a location somewhat distant from the speaker:

xchulek Pedro tya 'estere ai Pedro' (43) <xchulek P.^o tia>
b'ixiox tama uyotot Dios ail nojk'in tya ti Jerusalen 'you (pl.) went into the temple to see the feast day there in Jerusalem' (68) <vixiox tama uiotot Dios ail nobquin tia ti Jerusalen>

ma ka tya xa atalel uchakpejkajel tujol k'uxulob' chamenob' 'will he not come to judge the living and the dead' (61) <*maca tia xa atalel uchacpehcabel tuhol cuxu lob chamenob*>

The particle *way* or *waye* refers to objects close to the speaker:

way, waye 'aqui' (83) <*vai, vaie*>
utz xchulekox waye tintze 'bien es que esteis aqui conmigo' (48)
 <*vtz xchulecox vaie tintze*>
num tan tzumyel waye 'muy humedo esta esto aqui' (123) <*numtan utzumiel vaie*>

Modal particles

Modal particles express an attitude of the speaker toward the subject:

The particle *naik* 'ojala' (46) <*naic*> follows the verb in positive expressions, but precedes the verb in negative expressions:

Particle *naik* following the verb or predicate:

in-k'an-a xkolpaken naik 'quiero ser saluo' (52) <*incana [xcol]pacen naik*>
utz xchenakox naik 'ojala seais bueno' (43) <*utz xchenacox naik*>
awila naik misa 'ojala ubieras oido misa' (46) <*auila naik misa*>
utzil pekanb'il naik ak'ab'a 'blessed be thy name' (74) <*utçil pekanbil naik acaba*>

Particle *naik* preceding the verb or predicate:

xa xakojkon naik utakya Dios ma naik xchiket ti xib'alb'a 'si ojala guardares los mandamientos de Dios no iras al infierno' (46) <*xacohcon naik utaquia Dios ma naik xchiquet ti xibalba*>
ma naik mijil xak'alen confesar 'your confessing won't be in vain' (76)
 <*ma naik mihil xacalen confesar*>
ma naik mijil xamatan tuba Dios uk'alnabel a confesar 'It won't be in vain that you offered your confession to God' (76) <*ma naik mihil xa matan tuba Dios ucalnabel aconfesar*>
ma naik ak'ale tajnal tuut Dios 'that you not sin before God' (76)
 <*ma naik acale tahnal tuut Dios*>
in-k'an-a ma naik xlapaen 'no quiero ser asotado' (52) <*incana ma naik xlapacen*>

The particle *ajli* (42) <*abli*> serves to affirm a completed action. Similar to *naik*, *ajli* follows the verb in positive expressions, but precedes the verb in negative expressions. In his grammar, Morán (42) describes this particle as tricky, 'malignatis naturae'. By this he probably means that, although *ajli* refers to completed actions, it is not a particle for the past. The particle referring to the past in Ch'olti is *oni*. The particle *ajli* functions rather as an affirmative for events already completed. It seems to require a full verb; no statives appear:

Particle *ajli* following the verb:

inwosb'e ajli xuyak'un naik timb'a inmi inwixik 'deseo que mi padre me de muger' (47) <*ynvozbe abli xuiacun naik timba inmi inwixic*>

ink'ana ajli inpulu inch'ol ma uyak'taen ja 'quise quemar mi milpa enpero no me dejo el agua' (47) <*incana ahli inpulu inchol ma uiactaen ha*>

Particle *ajli* preceding the verb:

ma ajli ink'uxu b'ak'at tama vigilia ti innata naik uk'inil 'si yo supiera ojala quando fue vigilia no ubiera comido carne en su dia' (46) <*ma ahli incuxu bacat tama vigilia ti innata naic uquinil*>

Negation

The particle *ma* negates verbs or statives:

ma ink'ana 'no quiero' (145) <*ma incana*>
xa ma anata ati 'si tu no me entiendes' (163bis) <*xa ma anata inti*>
ma yan uch'akib'il ne te 'no ai jacha de este palo o para cortar le' (37) <*maian uchaquib ne te*>
ma utz 'malo' (137) <*ma utz*>
ma k'um 'duro, fuerte' (106) <*ma cum*>

Prohibitive

The particle *el* functions as a prohibitive:

el atala 'no lo toques' (168) <*el atala*>
el ak'ale awotot konajel 'no aras aora tu casa' (45) <*el acale avotot conahel*>
el aub'i axij pejkajel 'no oiras, no oigas malas palabras' (45) <*el aubi axih pehcahel*>

This particle also appears in a phrase from a letter by Marjil and his fellow missionaries written from the (Chol) Lacandon area (Marjil, Mazariegos, and Guillen 1984: 15). The quoted sentence *Macon, illa han tzaon an apam* can be reconstructed as *Macon, el ajatz'aon an apom* 'Macon, do not injure, here is your incense'.²⁶³

Temporal particles

Temporal particles are used to mark aspects that are not marked by verb morphology. Transitive verb morphology especially does not distinguish between incomplete and completive aspects; the particle *iwal* is used to mark the incomplete aspect:

ma ka iwal awili tuyanil atajnal 'aborres todos tus pecados?' (76) <*maca yual auili tuyanil atanal*>
iwal inchojb'en Dios 'actualmente amo a Dios' (44) <*yual inchobben Dios*>
ma ka iwal ak'ub'u tuyanil upejkajel Dios 'do you not believe the whole word of God?' (78) <*maca yual acubu tuyanil upe[ca]hel Dios*>

263. Note the use of Lacandon *an* instead of Ch'olti *ayan*; see p. 21.

One example from the grammar suggests that *iwal* actually might not be a particle as described above but rather a temporal adjective since it appears in a stative construction:

iwal-en ti k'as te 'aora corto este palo' (57) <*jualen ti cazte*>

To set events into the past, the particle *oni* is used:

utzen oni 'yo fui bueno antiguamente' (42) <*vtzen oni*>
utz ajli ne ixik oni ma kol konajel 'buena fue esta muger antiguamente no es ahora así' (42) <*vtz ahli ne ixic oni ma col conahel*>

The particle *ek'al* projects events into the future:

utzen ek'al 'mañana sere bueno' (42) <*vtzen ecal*>
xauk'un naik tikab'a ek'al ek'al kapa 'and give us our daily bread' (74)
 <*xaucum naic ticaba ecal ecal kapa*>

The particle *ix* stresses the completion of events. The last example shows the verb in subjunctive aspect:

uwinkiles ix 'ya los crio' (45) <*vvinquilez ix*>
winilesb'il ix tuyanil umenel 'ya estan todas las cosas criados por el' (45)
 <*vinquilezbil ix tuyanil umenel*>
xak'ajtin ix utzatzlenajel inpuksik'al 'ask already for the strenghtening of my heart' (76) <*xacahtin ix utzatzlenahel inpuksical*>

Conjunctions

The particle *ixte* joins elements, word or phrases, of the same syntactic level. It follows the first element of the second expression to be connected:

kakxiet umenel ti b'ijil k'otoyet ixte tujol witzil monte calvario uk'ab'a 'you fell by through it onto the road and you arrived on top of the mountain Calvary' (69)
 <*ca[c]xiet umenel ti bihil cotoiet ixte tuhol vitzil monte calbario ucaba*>
tuut Dios tuut ixte kana santa Maria 'in front of God and our mother, holy Mary' (72) <*tuut Dios tuut ixte cana s^{ta} Ma.^a*>
ma ixte innata ati 'yo tampoco a ti' (163bis)²⁶⁴ <*ma ixte inata ati*>
emeyet ti xib'alb'a alok'se ixte uyanimas b'axan kamiob' 'you went down to Xibalba and freed the souls of our forefathers' (70) <*emeiet ti xibalba alocze ixte vyanimas baxan kamiob*>

The particle *xa* introduces conditional phrases:

xa tuk'a 'si alguna cosa' (165) <*xa tuca*>
xa ma anata inti 'si tu no me entiendes' (163bis) <*xa ma anata inti*>

264. This is the response to the comment *xa ma anata inti* 'si tu no me entiendes'.

xchojb'enakox umenel Dios xa xikojkon utakya 'sereis amado por Dios si guardareis sus mandamientos' (51) <*xchobbenacox umenel Dios xa xicohcon utaquia*>

In the following example it is best translated as 'or':

k'ajrib'aet tama domingo tama nojk'in xa kuch xa si xa ch'ol xa tuk'a ti k'ajrib' ak'ale 'Have you done work on Sunday, on a holiday, be it carrying, firewood, field work or whatever work you do?' (78) <*cahnibaet tama domingo tama nohquin xa cu[c]h, xa zi, xa chol xa tuca ti cahnib acale*>

The particle *ti* is used to introduce conditional subordinate clauses:

ma ajli ink'uxu b'ak'at tama vigilia ti innata naik uk'inil 'si yo supiera ojala cuando fue vigilia no ubiera comido carne en su dia' (46) <*ma ahli incuxu bacat tama vigilia ti inata naic uquinil*>

ti ma xamuku junteik chateik ayel ti xsatpak tuyanil atanal umenel Dios 'if you have not hidden anything all your sins will certainly be redeemed by God' (76)

<*ti ma xamucu hunteik chateik ayel ti xcatpac tuyanil atanal umenel Dios*>

asata awak'ta umenel atajnal ayel ti utuch'u ub'a taut [sic] 'certainly your sin will be redeemed and put aside if he reveals himself to you' (77)

<*azata auacta umenel atahnal ayel ti xutuchu uba taut*>

xakoloen ti k'uxulen to way tuut lum 'you will redeem me so that I will live righteously here on earth' (72) <*xacoloen ti cuxulen to vai tuut lum*>

Questions are marked by the particle *ka*, which follows the first element in the clause:

chumul ka awixik 'eres casado' (75) <*chumul ca avixic*>

ma ka tabay ti chan 'did he not rise to heaven?' (61) <*maca tabai ti chan*>

uchama ka kab'ak'tal 'did he not take on our flesh?' (60) <*vchama ca cabactal*>

Loanwords

The main body of foreign words in the manuscript comes from Q'eqchi, a language from the eastern branch of the Mayan languages and Spanish. The Q'eqchi inhabited the area south of the Manché-Ch'ol, with Coban as their main town, which was also the departing point for the missionary efforts in the Verapaz. The contact between Q'eqchi and Manché-Chol was mainly based on commercial interactions. Even today there exist stories among the Q'eqchi about the Chol Wink living in the Sierras de las Minas, a relict of a once real relationship between these two groups (Schackt 1981). While the loanwords from Q'eqchi come from a variety of contexts, the Spanish loanwords reflect the missionary background of this manuscript's compilation and except for a few entries refer to concepts of Catholicism.

The manuscript also offers a few glimpses into the state of morphological incorporation of the Spanish loanwords. The first examples show the possessive ergative prefix:

uy-anima kawajawil Jesuxpto 'the soul of our Lord Jesus Christ' (60)

<*uyanima cavahauil Jesuxpto*>

tupat w-anima 'for my soul' (71) <*tupat vanima*>

Spanish loans appear with the *-il* suffix, marking an abstract noun, relational noun, and attributive:

junte ka u-Dios-il 'is his God-being one?' (59) <*hunte ca uDiosil*>

u-grasia-il espiritu santo 'the mercy of the Holy Spirit' (77) <*ugrasiail espiritu santo*>

muksa u-santo-il b'ak'tal 'his holy flesh was buried' (73) <*mucza u s.^{to}il bactal*>

They also appear as statives:

Dios espiritu santo-et 'You are God, the Holy Spirit' (65) <*Dios espiritu santoet*>

Diablo-et 'you are the devil' (79) <*diabloet*>

There are two instances of verbs derived from a Spanish root. In *crusin* 'to make the sign of a cross' the Spanish *cruz* is made into a transitive verb by the ending *-in*:

nup'u ak'ab' crus-in awut 'junta tus manos - persinate' (75)

<*nupu acab, crusin awut*>

The other example shows a Spanish infinitive verb *confesar* treated as a verbal noun, prefixed with an ergative pronoun:

tab'a a-confesar 'for your confessing' (77) <*taba aconfesar*>

Conclusion

This concludes the grammatical analysis of Ch'olti as preserved in the manuscript attributed to Francisco Morán. It is hoped that it may serve linguists and epigraphers alike. In the light of recent new approaches to the linguistic analysis of Maya hieroglyphic writing, much attention has been paid to the language Ch'olti. The information contained in the manuscript, however, extends far beyond linguistic data: the dictionary as a source for cultural information; the scribbled entries found on a few pages as a source for Spanish elicitation or editing methods of language materials; the history of the manuscript's compilation mirroring the conversion efforts by the Spanish and the demise of the Ch'olti people. It is my hope in the future to be able to present an edition of the manuscript that not only acknowledges the linguistic data but also integrates the cultural and historical presence of the Ch'olti people.

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